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AMERICAN
VETERINARY REVIEW.

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AMERICAN VETERINARY REVIEW.

OCTOBER, 1905.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, August 15, 1905.

SLANDERS UPON THE AMERICAN VETERINARY PROFESSION.—When I was in the States I was very often called upon by many friends to change my nationality—to become naturalized. I did not. Whether I did right or not is of no importance; but I did not, and since my return here, ten years ago, I have every reason to congratulate myself for not doing it, as I can now feel more pride and more at liberty when I have the opportunity to defend the land where I spent so many years of my life, and to speak for the profession, to the elevation of which I trust my modest efforts have contributed.

I may be the only European who is willing and who can speak *knowingly* and *without preconceived feelings* of the American veterinary profession. I may be the only Frenchman whose voice may try to stop slanders. It may be too weak to be listened to, but if so, I cannot help it. I shall do my duty, anyhow.

In previous chronicles I have pointed out articles which were published in some French papers, where *comptes rendus* of the meetings of our national association were severely and wrongly criticized. I have, in a paper presented to said association, recalled the imposed requirements for reforms and which were demanded for the elevation of American veterinary science and for

the respect that American veterinarians would have the right to expect from their professional brethren of Europe. What the result will be, I do not know. I may hope that the meeting of the A. V. M. A. that has just been adjourned has not been closed without some action. If it has, let me call her attention to the following:

* * *

"Professor Hoffmann, of Stuttgart, gives an interesting account of his impressions of the veterinary profession in the United States in the *Berliner Tierarztliche Wochenschrift* of April 20.

"The American schools consist of private establishments and those attached to the universities. These latter are most primitive, and to him it appears strange that the large State institutions, such as the University of Philadelphia, should have such a miserable place, insufficient in accommodation and badly equipped. The private schools, he says, are as bad, often consisting of small wooden sheds, with a board over them inscribed 'Veterinary School and Hospital' ('Vollends die Privatanstalten sind vielfach Kleine schmutzige Bretterboden mit der stolzen Aufschrift "Veterinärschule und Veterinär Klinik"'). He says that there are no veterinary schools in America comparable to those of Europe.

"In the cities there are a considerable number of veterinary practitioners, some of whom, in the large ones, make incomes of 100,000 francs (£4,000) per annum; some few whose practice lies amongst race horses more. Most only go in for horse practice on account of their value. In most of the large horse auction marts a *veterinary surgeon will be found to be one of the owners or on the board of directors.** . . .

"Hoffmann makes some severe strictures on the reputed surgical dexterity of American practitioners, and says it simply consists in taking dangerous risks, as, for example, performing an operation on the patient standing, when in Germany he would be under an anæsthetic. He says such are acrobatic performances, and that Americans have much to learn from Germany."

* * *

These absurd and untrustworthy remarks have been printed

* (Italics are ours. A. L.)

in the German papers (the *Berliner Tierarztliche Wochenschrift* of April 20); it has been translated and published in the *Revue Générale* of Leclainche (June 1), and the above clipping is copied from the English paper, the *Veterinary News*. I suppose it will run the whole series of European journals. Of course, some will say, what can you do about it? I will leave my readers to answer whether they are satisfied to have the veterinary departments of our universities considered as "rudimentary organizations;" if they are willing to have institutions like the New York State Colleges, University of Pennsylvania, and others called "a miserable place," "insufficient in accommodation" and "badly equipped," which our French confrère calls "small wooden dirty shanties;" and if they are willing that it should be admitted that America has not yet veterinary schools comparable to those of Europe, and finally, if they are satisfied to have their ability in surgery classified as "acrobatic performances?" If all those are to be accepted let them say so, but if they somewhat exist, it is certainly time for veterinary institutions in the United States to make changes; and whatever those may be don't give another chance for another writer to say that American veterinarians have yet much to learn from Germany.

* * *

INTERNATIONAL CONGRESSES.—The Old World is undoubtedly the country of Congresses. The one of Liege was scarcely closed than the one of Budapest is opened; the work of the Hungarian meeting is just brought to an end, and the Congress of Tuberculosis is beginning its seatings in Paris. All those gatherings, of course, are international, and necessarily in all the subjects that are presented and discussed are more or less of international interest. At the meeting in Budapest, matters of great importance were discussed, and I hope to be soon able to give concise reports of what has been done. In Hungaria, veterinarians were in large majority; in fact I do not know if any other scientists but members of our profession contributed to the labors of the meeting. In the International Congress of Tuber-

culosis, which is holding its meeting as our readers receive their REVIEW, the veterinarians will not be in the majority, but nevertheless the profession will be well represented. Indeed I find among the list of reporters on several of the questions which will be treated names with which veterinarians in America are familiar: Chauveau, Arloing, Cadéac, G. Petit, Moussu, Barrier, Leclainche, Cadiot, and others, for France; and many others as prominent from other countries. Dr. Theobald Smith will, as reporter for America, speak on the comparative study of the various tuberculoses. The questions which that Congress will be called to consider are numerous and the conclusions adopted will be important. I shall give you in one of my next all I can in relation to their connections with our profession. No doubt the visit to the Museum gotten up for the occasion will be one of the great attractions of the Congress.

* * *

CAN ASCARIDES CAUSE DEATH BY PERFORATION?—A question which has given rise to some little discussion was presented a little while ago in veterinary centres here: Can ascaris be the cause of death of an animal, by perforation of the small intestine? Prof. Moussu, of Alfort, had read a paper before the Société Centrale relating the history of a six-months-old colt having died so shortly after the first manifestations of illness that a diagnosis had not been made. At the post-mortem a characteristic lesion (?) was found: near the small curvature there was a round hole, quite regularly circular, through which some ascarides were engaged. From this hole started a laceration of the serous and muscular coats, ante-mortem in its characters. In front and behind the hole, in the intestine, ascarides were gathered in masses. The number of the parasites was estimated at several hundreds. The conclusion of the paper was that the intestinal perforation was the cause of death. It was evidently made by the ascarides.

Prof. Moussu endorsed this opinion and for him there are conditions where ascaris can be the initial and direct cause of such accidents.

Prof. Railliet, of Alfort, who is well known as a naturalist and helminthologist, differed from his colleague. Truly ascarides may promote rupture and laceration of the intestinal coats, but they cannot perforate, as it is well understood that the word perforation means the fact on the part of the parasite, to make its way, by means of its buccal structure, through the intestinal wall. For the professor this does not seem possible, as long as the intestine is free from any previous lesions.

The discussion which followed was not without interest. Some had cases to speak of with incidents relating to ascarides; a few were in favor of Prof. Moussu, while others did not wish to advance an opinion, and finally Prof. Desoubry seemed to close the discussion by recording the case of another animal, a male of twelve years of age, which, taken with colics, had died in a few hours. At the post-mortem ascarides in great number were also found in the abundant liquid that existed in the abdominal cavity. On the duodenum, at the small curvature, the folds of the mesentery were separated and between them there was a pouch, at the bottom of which was seen the intestine ruptured, and in which food and about fifteen ascarides had collected. Is it wrong to admit that these parasites were the starting cause of these lesions? There seemed to be no *positive evidence* that the perforation was due to ascarides.

* * *

But at the following reunion of those veterinarians, another case was mentioned and the post-mortem held in this case appears to confirm the opinion of Prof. Moussu. "An ovoid mass was found about two metres from the pylorus and on the concave border of the intestine. This mass is situated between the two folds of the peritoneum, which is highly congested. It is formed of food and clots of blood, and contains a reddish liquid, in which swims one ascaris attached by its buccal extremity to the peritoneal fold. . . . This pouch, bound downwards by the concave border of the intestine, shows on its inferior border a large blackish clot, adherent to the intestinal wall and in the centre of which exists an intestinal perforation, with borders

quite regularly circular and which has given passage to the ascaris. The characters of that solution of continuity seem to exclude the idea of a rupture so called, but on the contrary that of a perforation."

Which is right, the helminthologists or the pathologists?

* * *

FOREIGN BODIES IN FEMALE BLADDER.—Veterinary publications are rather poor in recording cases of hæmaturia due to the presence of foreign bodies in the bladder of the females of our domestic animals. A long paper on the subject was recently read before the Société Centrale which constitutes a most important contribution to the history of those hæmaturias of vesical origin. For us, ignoring the manner in which the foreign bodies reach the bladder, and the symptoms that followed, let us only consider what was removed from the urinary sac when they were examined by veterinarians. In the first, a long piece of wire rolled upon itself was found in the urethral canal and within the bladder a metallic ring covered with a thick coat of urinary sediment. Both of these removed, recovery soon follows. In another mare, two metallic rings covered with sediment and a porous body, perhaps a sponge, hardened by calcareous salt, were extracted from the bladder. In a third animal, it was a fork-like body,one branch of which was imbedded in the mucous membrane. Although hardened by calcareous deposits,it was extracted, but not without difficulty. Two metallic rings and a piece of wire were taken from the fourth; a calcareous sponge (?) from the fifth; a long spiral piece of wire, sharp and filed at both ends, was taken from the sixth and seventh. In the eighth a small wooden fork with two sharp branches; in the last also a fork, to which were attached two lead shots as big as small cherries.

It is quite strange that the lesions produced by the presence of these bodies were, so to speak, comparatively mild, taking in consideration the time they remained in contact with the bladder and judging from the extensive deposit of sedimentous matters they were covered with.

BIBLIOGRAPHY.—For my bibliographic notes I have received *Archives des Sciences Biologiques*, published by the Imperial Institute of Experimental Medicine of St. Petersburg (Russia), Vol. XI., Nos. 1 and 2. This large publication is issued in French and in Russian. It is a good thing that the former was sent to me. It contains a long article recording numerous experiments which were carried out by Prof. W. N. Boldireff on "the periodic labor of the digestive apparatus outside of digestion," and presents no less than 22 important conclusions, which seem to be well justified by the experiments related. Besides this there is a report from Dr. D. Zabolotmy on "experimental syphilis in monkeys." The conclusion of those experiments are resumed as follows: (1st) In this species of monkeys, inoculated with syphilitic virus, the disease develops regularly and the clinical symptoms are very similar to those observed in man; (2d) the primary characteristic ulcers appear at the point of inoculation, 2–3 weeks after the infection; (3d) the apparition of the chancre is first accompanied with a swelling of the ganglions,and then of a generalized polyadenitis; (4th) with some monkeys there are secondary eruptions which disappear rapidly; (5th) second infection does not succeed; (6th) the passage of the virus from one monkey to another always succeeds.

* * *

I have also to acknowledge the receipt from J. B. Bailliere & Son of an additional volume to the "Cadéac Encyclopedia," viz., the "Pathologie Chirurgicale des Tendons des Muscles et des Nerfs" ("Surgical Pathology of Tendons, Muscles and Nerves"). By J. Pader and C. Cadéac. Printed and bound in the same form and shape as the other 26 volumes which belong to the encyclopedia, the book seems to be a kind of special treatise on the subjects indicated in the title. It is divided into three principal chapters—diseases of tendons, diseases of muscles, and diseases of nerves. In the first the tendinous luxations in general and those special to the cap of the perforatus on the os calcis, to the lateral extensor of the phalanges and to the

tendon of the postea spinatus. Then come the various tendonites, those due to traumatism, to sprains, the infectious tendonites and the parasites. Knuckling and sprung knees close that chapter. In the second the many affections of muscles are treated: bruises, ruptures, hernias, myosites, rheumatisms, foreign bodies, tumors and parasites. In the chapter of the nervous diseases we find first the cerebral and medullary commotion, contusions, wounds, abscesses, etc., as belonging to the nervous centres. In diseases of nerves the authors treat of compression, contusion, wounds, etc., neuritis and polyneuritis, tumors, and then some special paralyses as those of the fifth pair of cranial nerves, of the brachial plexus, of the radial, the obturator, femoral, great sciatic, etc. No doubt this is a great addition to the Encyclopedia.

* * *

I must not omit to also acknowledge the receipt of the *Louisiana Planter*, with article from Dr. Dalrymple on sugar feeding; that of the sixth semi-annual report of the Chief of the Cattle Bureau of Massachusetts, Dr. A. Peters; and those of the Chief Veterinary Surgeon of the Cape of Good Hope and of his assistants for 1904—copy of those which were presented to both houses of Parliament by order of the Governor. A. L.

THE RETIREMENT OF DR. SALMON.

The veterinary profession will regret to learn that Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, United States Department of Agriculture, has tendered his resignation to the Secretary, and that it has been accepted. The regret will be genuine among those who have the welfare of the profession closely at heart, since he was an exemplar of the best application of the highest principles of advanced scientific medicine as applied to the control of animal diseases. Connecting himself with the Department of Agriculture in 1879, years before the Bureau was instituted, he became its logical head at its inception, and from the most rudimentary beginning he has guided its footsteps through all these years, constantly enlarging

its influence and its capacity, each year more zealously safeguarding the herds and flocks of the land; extending the market for our animal products into every civilized country on the globe; driving from our shores scourges which threatened our live-stock interests, and fostering every principle of science and commerce affecting the conservation of the wealth of the nation and the health of its citizens. Twenty-one years is but a short time when estimating the progress of a nation; but in that time the Bureau of Animal Industry, under the wise and conservative direction of Dr. Salmon, has made a record equalled by that of no other department of the National Government, and history will give to the dethroned chief the credit which political chicanery has temporarily wrested from him, for such work as he has done for this country cannot long be obscured from those who seek after the truth, and who are willing to place a wreath wherever they find a worthy brow. His record is one which is an inspiration and a glorious example to any profession or calling, and in the hearts of his colleagues his reputation is always safe; they know him for what he is and what he has been; they know that every act and every thought of the man has been in perfect accord with the most scupulous conception of honor; and that his actions in the only charge that was laid at his door were a monument to his nobility of character and his high sense of duty.

The Bureau of Animal Industry is a model for the world, and Salmon has been the most potent factor in making it such. Shall this great name be sullied because political expediencies necessitate the production of a scapegoat? No; his work will stand for all time as the greatest example of professional devotion and administrative sagacity, and time will bestow upon him that justice which must for the present be withheld by the exigencies of political strife.

DR. A. D. MELVIN.

The vacancy caused by the resignation of Dr. D. E. Salmon as Chief of the Bureau of Animal Industry, Department of Ag-

riculture, has been filled by the promotion of Dr. Melvin, who has been designated by the Secretary as Acting Chief of the Bureau. His close association with the affairs of the Bureau in all its varied ramifications, makes his promotion peculiarly fortunate for the department and for the country, as there is not likely to be any radical departures from the policies which produced such glorious results in the past twenty years. We are particularly pleased that the new chief should have been chosen from the veterinary profession, since there has arisen a subdued sentiment in the live-stock press for a stockman to occupy this high office, the most powerful advocate of this contention claiming that the position requires more than a professional man to direct the varied interests of the Bureau, advice upon purely professional questions being sought from veterinary lieutenants. Salmon has demonstrated, and we believe Melvin will confirm the proposition that a veterinarian can be as broad and as deep in executive matters as any man in any other walk of life. The possession of a diploma indicating professional training does not necessarily close avenues to other classes of knowledge.

Dr. Melvin enters upon his important duties with the entire good-will of the profession, and we trust his administration may be as successful as that of his distinguished predecessor.

HOW THE "REVIEW" SHOULD BE EDITED.

We are truly grateful to a number of correspondents for the kindly interest shown by them in this publication, and for their suggestions looking to an improvement in the quality and character of its contents. We should feel the frost of isolation if we pursued our course from month to month without the assurances of our readers that they were watching our work in behalf of the profession, whose true representative this journal steadfastly aims to be. It has been so oft said in these pages that the REVIEW is just what the profession makes it, that the repetition of the remark seems almost superfluous, if we had not the desire to impress this fact very strongly upon the minds of our readers. It is their contributions to its pages which make it worth while

to publish this magazine, and if their coöperation were withheld it would soon cease to be of value to the profession. These explanations are offered to show how much their suggestions are welcomed, and how carefully they are weighed. We must confess, however, that some of the more recent recommendations are so radical and so opposing to the varied interests which the REVIEW represents, as to convince the editors that their established policy is the best for the greatest number.

One correspondent of a practical turn of mind thinks that all theoretical papers and articles detailing research work and advances in the field of bacteriology and kindred subjects should be eliminated, and that the publishers should make arrangements with well-known surgeons throughout the country to contribute regularly papers upon practical every-day topics, leaving the other branches to purely scientific publications. A second correspondent is strongly impressed that the publication of so many papers upon commonplace topics is not in keeping with the dignity which the profession should maintain, and if he were the directing editor all such material would be eliminated, and space given only to articles eminating from the leaders in advanced thought in veterinary science. Still a third gentlemen believes that the "news" of the profession would be more acceptable to the readers of this journal, and he believes that if it had more correspondents throughout the country who would write newsy letters telling what this one and that one is doing, and giving "matter that is more readable and interesting," the subscription list would double itself in six months. He would at the same time "boil-down" the best articles in the foreign journals to the "bare facts," thus "saving busy practitioners the time and annoyance necessary to wade through so much superfluous material."

The recital of these three divergent suggestions does not by any means exhaust the contents of a large pigeon-hole in which such communications are placed for reference and consideration. Many others are received, and some contain advice that is not only wise, but advice which is often adopted—to the infinite

benefit of all concerned. We selected these three as representing the extremes of suggestions, and as a means of furnishing a text to justify our policy in furnishing monthly a great variety of material: articles upon veterinary science in its highest estate as it struggles to keep well up with the rapid advances in scientific medicine through the great research laboratories of the world; articles appealing to those who labor in the field of Government inspection; articles and items tending to help and interest the men who are building up a better and a more worthy service in the army; articles which will be helpful to the members of the profession who labor with the "new" diseases of the tropics, and which shall enlighten those at home about the new conditions met with in the Far East; articles which appeal to the vast army of general practitioners, which, whether in the form of papers or reports of cases will tend to make their work more intelligent, more interesting and better, by bringing out the most helpful suggestions in pathology, therapeutics, surgery, hygiene, etc.; articles that help all from every point of view, and so on and on. No one who labors in comparative medicine, in whatever field, must open his copy of this journal, run it through and lay it down with a feeling that he has found *nothing* to interest or instruct *him*. He must find it, for it is there. If scattered through the pages, items of news and scraps of miscellaneous notes, even a few mirthful squibs, can be collected to brighten the prose of scientific reading, we do not think we have committed a sacrilege.

And this is the policy which has guided our efforts in the past; and, viewed from all sides, it appeals to us as best for our large family of diversified tastes and varied interests.

PRESIDENT LOWE'S AMBITION.

Before the New York State Veterinary Medical Society at its late meeting in Ithaca, President Wm. Herbert Lowe, of the American Veterinary Medical Association, spoke of his purpose to issue a call for *one thousand recruits* to the membership of the national organization. When it is borne in mind that the

present membership is only a little in excess of six hundred, and that it has taken forty-two years to secure this number, the magnitude of his undertaking stands forth as a stupendous proposition. But its very audacity is one of its greatest charms, and makes its accomplishment more easy than though he had aimed his arrow at a lesser mark. Every one familiar with recent veterinary history knows that the New Jersey Napoleon usually does just what he says he will do, and, prodigious as his present burden seems, the REVIEW predicts his entire success, for not one avenue will be untraversed to accomplish what he has set out to do. Besides, he is absolutely irresistible, and while his subjects are protesting they succumb to his demands with submissive demeanor, later on to give thanks for the good he has done for them. His proposition briefly is that every one of the six hundred present members *must* supply in 1906 two new members, and for fear some may fail he insists that three new members shall be pledged by those in the more populous centres. While he spoke we heard three members absolutely pledge themselves to deliver up at least two recruits each next year. With such a leader—heart and soul in the work—the hour has come when the A. V. M. A. must go forward with a bound, and become the largest veterinary medical association in the world. Every one should rally around the Lowe banner, and the fulfilment of his great task will be much easier than would appear at its first contemplation.

NOW that the new pharmacopœia is going into effect as the official guide for pharmacists, it is important, in view of the changes made in the strength of certain potent preparations, that prescriptions written with old preparations be not refilled.

THE NUMBER AND VALUE OF HORSES IN THE UNITED STATES.—The number of horses, according to the Department of Agriculture returns, has risen from 14,213,000 in 1890 to 17,057,000 in 1904. In the same time their value has risen from $978,000,000 to $1,200,000,000. The greatest scarcity was in 1900, when but 13,597,000 were found. All this in spite of the fact that fifteen years ago it was said that the cable, the trolley and the bicycle—and later the auto trucks and automobiles—were destined to put the horse out of business.

ORIGINAL ARTICLES.

THE PROFESSION AND THE ADVANCEMENT OF SCIENCE.

SOME PRACTICAL SUGGESTIONS ON WAYS VETERINARIANS MAY AID INVESTIGATIONS IN THE VETERINARY SCIENCES.

By D. Arthur Hughes, Ph. D., D. V. M., Cornell University, U. S. Gov. Inspector, East St. Louis.

Presented to the 42d Annual Meeting of the American Veterinary Medical Association, Cleveland, August 15–18, 1905.

What is the central thought in the minds of the majority of men who attend the yearly gatherings of the American Veterinary Medical Association? It is this. How shall I gain information which will be of service to me as a professional man?

The kinds of information sought are as various as the *personnel* of the attendants at a national meeting. The Association has a national and an international character, for papers presented before it are from veterinarians in our domain and abroad. However most men who attend go to see operations or to listen to papers and discussions. A statement of the kinds of persons attending and the classes of knowledge sought reveals how veterinary interests have multiplied since 1863, when the Association was founded, and in how many fields of endeavor veterinary knowledge is utilized for the benefit of animals as property, or by reason of the hurtfulness of animal disease to man. There attends the practitioner who wishes to gain by listening to the speeches of prominent medical men or surgeons, enjoys the criss-cross of questions and answers and goes away to try new things gleaned from the clinical experiences of others; there attends the educator whose heart and soul, if he is worthy of his office, is engrossed with unquenchable longings for the betterment of the profession in all its activities, who points out error in professional practice, shortcomings in educational matters, the advisability and urgency of stricter and higher profes-

sional training; there attends the scientific investigator, collegiate or State, whose mind is heated over scientific queries or problems, who either reads a paper and stands the brunt of the fusillade of questions with which he is plied or makes sharp inquiries himself on technical questions raised; there attends the State veterinarian who is bent on gaining information on new diseases or old diseases which have found a foothold in neighboring or distant States; there attends the member of a live-stock sanitary board whose interests are in sanitary measures relative to menacing epizoötics and contagions; there attends the federal government's veterinarian or the veterinarian of other nationalities who, though he wishes information mainly on infectious and sanitary police, cannot be neglectful of any knowledge which the national meeting may supply. In all there is a hunger for knowledge. The motive for attendance of most men is the same: how shall I obtain knowledge of usefulness in my daily walk of life?

Now, meritorious as the desire is to obtain knowledge useful for professional purposes, to assist in new professional endeavor, the question may be asked, is the eagerness to receive knowledge on the part of our membership commensurate with the eagerness to give knowledge. An eagerness to receive knowledge will always hold its place as the chief incentive for attendance on the national meeting; but is it the most commendable motive; is there not a better? In the excitement of discussion, points raised before the national association always have and always will kindle many expressions of opinion; indeed, this in one of the chief arguments in favor of national gatherings of any sort. Also in the inflammatory atmosphere of discussion or debate upon a mooted question in veterinary knowledge points may be raised which otherwise might not be thought of. Still, though a valuable way, *impromptu* discussion is usually not the best way to treat a scientific topic or subject. Here, in scientific matters, if anywhere, there is a call for calmness of mind and long reflection before statement is made, which will bear scrutiny or stand the fire of such a dis-

cussion. With the hope that I am not infringing on the right of criticism in this matter of the Programme Committee, it has occurred to me to suggest that, perhaps this year, certainly in the past, there has not been an absence of difficulty to obtain scientific papers sufficient in number and of the right sort for presentation before the national association. If so, the gentlemen of that committee should not think that their trouble is due alone to the fact that the papers asked are for the extraordinary occasion of a national assembly of veterinarians where the fire of criticism is so warm. The contention can be made and sustained that the rank and file of the profession have not that scientific enlightenment, that knowledge of what is known and what is not known in the science, nor that interest in scientific advancement for its own sake which makes men capable of thinking upon, working upon or writing upon a subject in veterinary medicine which would have anything of novelty if presented before a national assembly of veterinarians or printed in a veterinary magazine at home or abroad. For too much time cannot be afforded in a national meeting for mouthing upon old and well-known subjects. The purpose of a national meeting should be not only to build up the knowledge of individuals attending it, but to advance the knowledge of the profession as a learned body interested in investigations; and how can this be done unless the papers presented are largely noteworthy for this characteristic. An eagerness to attend the national meeting merely for the sake of hearing, entering into discussion and learning is a good thing; an eagerness to present a paper, even though the contents contain nothing that is new, nor anything which stirs up the thought of those assembled is better; but an eagerness to present a paper the embodiment of thought upon a new phase of our work, upon an investigation of a disease, upon a problem which cries for elucidation—to the preparation of which or the writing of which was given many days of study and many hours of reflection, an eagerness of this kind is best of all. A good motive is to attend the meeting without doing anything for it; a better motive is to assist at

the national gathering by obtaining special knowledge on some topic beforehand and to present that knowledge in a well-digested, thoughtful paper. The best object is how to advance the veterinary sciences through the medium of the national association.

I. The status of veterinary writing at the present time.

There is a greater blessing in giving than receiving knowledge; but the ability to work in new fields of scientific knowledge, to delve in a new topic in veterinary science never before handled by the investigator and the cultivation of an ardent desire to discover new things or to explain vexatious problems will not be aided if the main aim of scientific study is forgotten or neglected. The main aim of scientific study is to make men capable of the pursuit of new knowledge through investigation, rather than to give them a stock-in-trade for practical usefulness. The man who asks for a stock-in-trade which will enable him to receive some diploma, license or commission, asks for a scientific baggage of very doubtful usefulness. He is likely not a scientist; nor, if his mind does not change, will he be likely to add anything to scientific knowledge. The chief glory of the scientific school, properly so called, should be not so much to pass a man through an apprenticeship in cut and dried knowledge, but to place him in the fore-front of all recent knowledge in the sciences he studies, to put him in touch with all the recent aims, desires, hopes, investigations in all the branches of medicine touching his intended profession and to stimulate whatever of scientific originality there is in him. This has been the dominant effort and the first thought in teaching of men like Bouley, Cadiot, Nocard and Vallée at Alfort, of Schütz at Berlin, of Pfeiffer at Giessen, of Kitt and Friedberger at Strassburg, of McFadyean in London, of Pearson in Philadelphia, of Law at Ithaca. Yea, more, it must be held to steadfastly if the veterinary sciences are to advance.

Far be it from me to draw a lurid contrast between the state of veterinary medicine on this continent and that in Europe. Nevertheless, in taking a view of the status of veterinary writ-

ing at the present time on this continent, we perforce find many limitations judged, first, by the books printed on veterinary medicine; and, second, by the scientific papers or articles printed.

We are proud to possess under an American imprint the monumental work on veterinary medicine by Dr. Law, which sets the standard of what books on veterinary science should be. In it all recent knowledge touching every point covered is included. Withal because of the amplitude of the knowledge displayed and because of the manner in which it is presented, the work stands in equality, if not in superiority, on shelves in medical libraries with works of like ambitiousness and the same modernity in human medicine. Such is the ambition of the writer in this his crowning work as an author, that, although only two or three years have elapsed since its publication, it is under revision to bring it up to most recent knowledge. In American veterinary literature we have no books similar to it in scope. Indeed the amount of veterinary books appearing from the veterinary press is very small, so that our magazines never threaten to be swamped by reviews and criticisms of such publications. Without making specific references I may say that in the last few years there have appeared from the American press books on veterinary specialties—like bacteriology, pathology of infectious diseases and surgery, the aim of which has been to study infections in America or surgery as it should be taught here. But most of the works we are prone to use as text-books are either lumberly translations of foreign texts often inapplicable to American conditions or books which copy altogether too freely from European books or slavishly adhere to their errors. In artistic illustration of scientific points, in inexactness of scientific language used at times and in the printer's "make-up" our books are in sharp contrast with the great modern works in human medicine. Nor need I speak with bated breath of the folly of using books in branches of human medicine like histology, embryology or materia medica and relying too much on the probability of the facts, true

enough, in human medicine, but likely wrong when applied to our animals. The time will come when our knowledge of these and other branches of comparative medicine will be so modernized as to necessitate scientifically accurate text-books on each branch entirely devoted to each.

What now may be said of many of the articles on veterinary topics written in America. Obviously they are commonly very faulty. First of all their contents or subject matter are at fault. They are apt to be either a mouthing of old material or a repetition of the commonest things in text-books. When we compare, even for a moment, these papers with those printed in the great weeklies, monthlies, quarterlies or annuals in human medicine we come at once upon the striking contrast. Human medicine is so noble an art studied by so many mighty intellects that a discovery in it or a capacity for earnest productive thought in it is to a man nobility and honor. The zest for discovery, the eagerness to elaborate the thought upon it with scientific exactness and nicety is an inspiration. Secondly, scientific papers in veterinary medicine are faulty in treatment of the subjects chosen. Even if it be granted that the information which most of our writers wish to convey is new (which is untrue), most of them are wretchedly faulty in the way they present their information. It would seem that a thoroughly trained scientific mind which had worked upon a topic carefully and with that intensity characteristic of the modern scientist would loathe to present that information in anything but a scientific manner. Yet we find many of the articles bungling and disorderly. They lead to no conclusions, for it seems the authors have none to present. They begin in doubt; they continue in bewilderment; they end nowhere.

Many of the papers printed show no realization of what science calls for in the way of obtainment and presentation of scientific matters, which are: first, new knowledge; second, scientific presentation of it. This may be very well borne into the mind of any one who will take the pains to compare many of our scientific articles with ambitious articles on a similar topic

printed in a magazine like *The American Journal of the Medical Sciences.* The difference is overpowering. In the articles thought worthy of being printed in the best American journals in human medicine or the allied sciences we find newness of material, scientific procedure, highly artistic illustration—everything fitting the dignity of the science. Likewise on the European continent a similar standard is found both in publications on veterinary and human medicine. We need to be told over and over again that in our veterinary publications we are lagging far behind the Europeans and that our work contrasts very unfavorably with the work done for scientific advancement by the men in the profession of human medicine on this continent. Yet in the printed proceedings of the A. V. M. A. for 1904 are several articles which compare favorably with similar articles on similar topics in transactions of other scientific societies: notably the articles of Higgins, A. R. Ward, Moore and Milks.

II. The profession and the advancement of science.

There are several reasons why professional men should be interested in scientific advancement. It is short-sightedness to exhibit a lack of interest in new knowledge, and it is a sign that the man is stagnant and old-fogyish. A study of the most prominent practitioners in any of the specialties in human medicine or surgery, in any of the specialties in veterinary medicine or surgery, will prove that the most successful financially are those who are most zealous in the pursuit of new knowledge and in its application to their needs. They are ardently studying and carefully applying the new thought themselves. In human medicine and surgery at least they are compiling statistics on the results of their experience with methods, with instruments, with drugs, and are elaborating in the most careful manner their data for presentation before scientific societies interested in their specialties. This in human medicine is not a mean, unprofessional and vicious desire to advertise. It is simply a genuine purpose to advance the special knowledge of a science that further acuteness and cleverness in that science may be obtained, discoveries announced and experiences recited.

Witness the laryngological, the gynæcological, the otological and the rhinological societies in human medicine with their well attended meetings, their technical discussions and the publication of their work in transactions and in special magazines.

It may be alleged that these societies have their counterpart amongst us; but this remains to be proven. High specialization and exclusive devotion of individual energies to it have their rewards in human medicine in high fees easily obtained. With us no such specialization and no such fees are to be expected. Yet the particular branch of our work to which a veterinarian devotes himself makes something of a line of cleavage between him and the man who applies himself to another branch. This very devotion to a single branch ought to tend to the greater and greater possession of special knowledge of that branch with opportunities to assist in the advancement of science in that particular branch. Roughly speaking we have the divisions of the army, federal veterinary inspection, State work, experiment station work, teaching and general practice. Does each yield its quota of men who attempt to advance science by investigation and presentation of the results of investigations? Not at all. Nor until men with the requisite capacity bestir themselves will there be produced bodies of scientific papers equal in scientific import and content to papers on similar subjects in human medicine. For an illustration I may be pardoned for referring to Dr. Liautard's French, Italian, Belgian and English case reports towards the end of the AMERICAN VETERINARY REVIEW. We all know that in America our practitioners and specialists are coming across numerous cases worthy of special report and publication; equally interesting, and in many cases, more interesting and unusual, and yet going unrecorded, than those summarized by Dr. Liautard. This I say not to depreciate Dr. Liautard's efforts; but to show how pigmy our own efforts are. Evidently there is need for greater effort in America for the advancement of science.

III. Some of the lines along which advancement might be made at the present time.

1. In the field of pathology.

We do not prize enough the opportunities we have to perform post-mortem examinations; neither is the duty of making autopsies sufficiently impressed upon us. The habit of performing post-mortem examinations stirs up wonderfully the interest in new knowledge. Men who are consistent in this matter find mysteries cleared up; come across extraordinary conditions, often entirely beyond our efforts as medical men; bring to light very often things never before reported in the science. May I speak of my own experiences in this work? We federal veterinary inspectors are constantly coming across the most extraordinary pathological conditions in our post-mortem examinations. Numberless fat animals, frisky or otherwise seemingly well, at autopsy present amazing appearances which persons not accustomed to the work, and here I include our professional men, would never believe if merely told. We are constantly running across pathological conditions, the description of which, or notes on which, are not found in our works on pathology, and if descriptions of them alone were made they would not be given credence no more than a tale from the "Arabian Nights." This pathological material is, through carelessness or indifference, constantly being thrown away and the knowledge lost to science. The same carelessness prevails amongst practitioners and the same criticism may be urged against them. Yet in the field of pathology there are numerous kinds of pathological material which are desirable, numerous pathological facts of which we are ignorant.

2. In the field of infectious diseases and parasitisms.

No one would dare to say that we now have knowledge of all the infections likely to attack our animals. The record in a scientific paper of an infection new to the science; or data tending to prove that an old infection has been introduced amongst our flocks or herds are both contributions to our knowledge of infections. The Department of Agriculture is occasionally publishing papers recording the discovery of diseases present amongst our animals. These give us the hint of watchfulness

for the diseases indicated. The possible menace of European or Philippine infections not only is a warning, but points out the line upon which investigations may have to be made.

Within the last few months has appeared from the Government Printing Office a work on cœnurus cerebralis, in which it is pointed out that, although this disease has been hitherto uncommon here, it has been recently discovered plentifully enough in certain Western flocks. This has its lesson. There are many parasites which are not known to be a menace to the country which yet may become scourges. The life history of many destructive parasites is not known. Many of the parasites, both ectozoa and entozoa, of the Philippines and West Indies have never been collected or reported. Parasitisms causing diseases, particularly those that are destructive, it is our duty to study and report.

3. In the field of veterinary hygiene and sanitary police.

Many are the unsettled and mooted questions in veterinary hygiene. There are questions of feeding, stabling and carriage by land and sea which vex us and will bear investigation. Where are the papers on these questions recording the study and experiences of these points from men whom we would expect to be interested in them? Here is a line of thought which should especially appeal to the army veterinarians. In these subjects they may be expected to be adept. The intense study of them and investigation of the problems involved will go a long way to impress the intelligent officers of the value of the army veterinarian. As much as anything else it is the information on these points and the power to think on these points on the part of the army veterinarians in the regiments in India, which has gained the British "A. V. D." better recognition and higher rank.

Many are the mooted questions also in sanitary police. Have we reached the limit of our knowledge on dips and dipping, on points concerning quarantine and quarantine measures? On prophylaxis, the prevention of infection? How often we miss knowledge of just how a particular infection is carried and there-

fore what sanitary measures are necessary. The spirit of investigation will find the clew and the record may be a contribution to knowledge.

4. In the field of veterinary medicine and therapeutics.

The recent efforts to determine the exact value in veterinary therapeutics, on the part of Doctors Fish and Wilbur, of echinacea and calcium sulphide; the recent gaging of the value of stovaine and adrenalin should teach us something. We are yet in infancy of our exact knowledge of the therapeutic effects of many drugs on our animals. In some drugs with a definite effect on man we find in our animals there is the opposite effect; sometimes the effect is *nil* in the case of our animals; sometimes the method of elimination is different. A multitude of questions are to be studied. Dr. Fish, who was the first man in this country to ardently plan a system of veterinary urine-analysis, has made several discoveries of importance and has demonstrated in his laboratory and recorded in British and American veterinary magazines the value of the study as an aid in diagnosis of difficult diseases. At the same time, last year and this year, he has issued from his laboratory publications, the object of which is to show the work done in investigations in urine-analysis, materia medica and veterinary physiology. These are efforts in the right direction: for they are researches making no compromise with falsity or supposition.

5. In the field of veterinary surgery.

Even though it be granted that knowledge of an operation is best obtained by seeing a skilled surgeon perform it, by assisting him or performing it under his direction, it cannot be forgotten that there are numerous surgeons throughout the country, and the world for that matter, many of them very skilful, who are desirous of learning new operations, and who, because of aptitude and adeptness, can learn them and apply them from reading about them, particularly if the description is aided pictorially through various forms of illustration. Comparatively few prominent surgeons go the length of writing out detailed descriptions of operations with illustrative matter. It is

buncombe to say "a description of the operation is simply impossible." The trouble is that surgeons either are incapable or unwilling to describe them. In human surgery there is much publication of the technique of new, tried and approved operations, neither time nor money being held back to aid the art. At the World's Fair in St. Louis last summer there was abundant proof of this. In the exhibits of the German physicians in the Palace of Education were rooms in which were exhibited by means of highly artistic colored plaster and wax casts the technique of most of the most difficult operations on the human eye and ear. There is, indeed, some enterprise in America on the part of our prominent veterinary surgeons to aid in description of operations through the versatility of the pen, drawing pencil and art brush; and, the resourcefulness being granted, we might do more by taking cognizance of the ways of the French and the Germans. What is needed is a high-minded enthusiasm which is almost madness, on the part of our surgeons. The scientific knowledge which a surgeon has obtained should be the possession of the profession. We have our books on surgery—W. L. Williams, O. Williams, Möller, Liautard, Merillat. What is needed is scientific papers on recent work. Dr. W. L. Williams admirably leads the way.

IV. How veterinarians may aid in the advancement of science.

1. Prerequisites.

What, it may be asked, are the prerequisites for scientific advancement? The first undoubtedly is that the individual who desires it should have time to aid in its accomplishment. He who thinks of nothing else whatever in the world but money has no time for other ambitions. But he who has that most desired luxury, "learned leisure," that is time to devote to something higher than paltry pelf and who gives not himself up to indolence is the man who has the opportunity for self-improvement and to aid the science. The second prerequisite then is character: ambition, diligence, zeal—a zeal which is personal, professional and humanitarian, which aims at personal

advancement, advancement of the profession and advancement of the science in its value to humanity. The third prerequisite, but this can be bettered if the other two are present, is preparation to aid in scientific advancement. No man is likely to advance the science if he has not sufficient preliminary knowledge to know what is known and what is yet to be known in our work. He may have eyes, but not the preparation for seeing: nor the knowledge of what might be found.

2. *Keeping up with the scientific literatnre of the times.*

In no country is there such an abundance of high-class literature which may be had by veterinarians free of cost than ours. The Department of Agriculture, through its various Bureaus, floods the country with scientific papers touching veterinary science or directly upon veterinary subjects, while allied departments are doing much the same thing. The various States, through their agricultural colleges, experiment stations, and live-stock sanitary boards, are publishing papers of interest to veterinarians which, too, are free. The Canadian, British and foreign departments of agriculture are issuing papers on veterinary matters which may be had *gratis*. The agricultural press, with the bettering of veterinary education, is coming to rely more and more on our professional judgments. By use of the selective faculty any veterinarian interested in a special subject may obtain much literature upon it without cost to himself. This may save him the trouble of inquiry into a subject, when the answer has already been found for him. This may keep his faculties wakeful on points in which he is interested or ought to be. Best of all, it may suggest points to him which belong to his scope for investigation.

3. *Personal investigations or those carried on alone.*

An excellent means for stirring up the investigating spirit is to get the collecting habit. If men would begin the formation of private collections of material relating to surgical or medical questions they would find their interest in investigations along the line of their particular scientific fad (if you would so call it) would increase manifold. A man may destroy all other

pathological material; but if he collects everything along one line—say the diseases of the teeth, or the diseases of the bones of the foot—it is a saving grace in the collecter. The personality of the man is shown in these scientific collections, for they may illustrate any one point in the science, or several kinds of diseases, the causes of which may be obscure. Yet the value to the faddist or investigator and probably, after a while, to the science, cannot be gainsaid. The knowledge gained may be reported through photographs, drawings, the expression of facts proven by the specimens, or through exhibition of the specimens themselves.

I have had reason to speak once before in this paper of parasites. The science of parasitology can be greatly aided by private collections of animal parasites. The parasitic ectozoa and entozoa are an important phase of economic entomology. There are so many unsettled questions on the life history of parasites which vex us; which, if cleared up, would help our work in the suppression or extermination of them, that the collecting habit might well be the means of enlightening us.

The studies in the therapeutic value of drugs in the domesticated animals, also, must be carried on by private individuals. Our ignorance of the therapeutic value of many drugs is such that there is here opportunity to make experiments and collect data. In no other branch of our work, aside from pharmacology, is there such a scarcity of books, articles, writers.

But these individual efforts will not have their influence and effectiveness without the results of collection or the tabulated data are prepared for the press and receive publication. What, then, should be said on this point.

First a warning note should be sounded against the folly of hastiness. The scientific temper, paradoxical as it seems, calls for delay. Hesitancy about the propriety of publication, and care in the elaboration of details, are characteristic of the scientific worker. Mature work only can command respect.

In the preparation of material for the press there should be, first of all, a study made of all previous knowledge on the

subject with exact reference to points already made by scientists who have gone over data in the same field. The novelty or value of the worker's own material can thus be ascertained. Then should follow the collection of data obtained, tabulations of experiments or observations and the facts gleaned therefrom. Photographic work, drawings from actual specimens, artistic representation in colors done from specimens, are an aid to substantiate statements. The bulletins of the Pathological Division of the Bureau of Animal Industry which have been printed during the last few years, may be taken as models; for they are among the best of our scientific publications. It is a duty incumbent upon those who are versed in knowledge new to the science to publish their results. The truth demands publication and recognition.

But why publish at all, we may ask, when we feel that the work meets with no response. There is a certain wrongheadedness in men who think they are scientific professional men when they are not acquainted with the advances made, or being made, in the biological sciences related to medicine; nor are themselves stimulated to aid in the advancement of knowledge. That advance is being made in a science is indicated by the amount, value and influence of the papers published for that end. Why are we amiss here? Not from lack of interest; not from lack of pride in the work; but from lack of cognizance of methods for advancing the science, the grasping and publication of new knowledge.

4. By aiding investigators in their work.

Nothing is so foolish as the habit of wasting unusual pathological material—a statement which will bear reiteration. For the lesions found may never have been noticed before: the conditions may never have been reported in the science. Science lags because of the waste. Specimens found may lead to the most important discoveries, elucidate a theory or lead to its abandonment. How often we hear the statement, "I wish I had saved the specimen"—a note of regret when the description of the speciman to another man brings out his judgment that

the specimen was of unusual interest; if not lost would have been proof of scientific statements made about it; and, if preserved, might have been of perpetual value. This leads me to speak of the first means to aid scientists in investigation.

(*a*) *Sending pathological or other material to investigators.*

If we cannot use specimens ourselves, at least we can aid others by having the grace to send specimens to aid in their investigations. The means of preservation is easy—bones can be boiled out and sent dry; teeth the same way; or if the specimen is such that the contiguous or adjacent tissues should also be preserved, the specimens should be preserved like soft tissues. Soft tissues can be placed in five per cent. formalin, sealed hermetically in cans, boxed in saw-dust for expressage, which the receiver usually pays. Such specimens may be sent to those who are interested, great care being taken that the specimen is of such value as to pay for the bother. The places to send are: those veterinary colleges where investigators are known to be zealously laboring; veterinarians of the experiment stations; the United States laboratories. Besides, the sender will be benefited. He will know the results of the examination or investigation; he may receive slides of tissues taken from the specimen,—sent for his own study; if a paper is written, he will receive mention and be personally stimulated.

(*b*) *Reporting new or unheard of findings to persons interestea in investigation.*

Sometimes accidentally, as it were, we run across some situation of affairs which we have reason to believe is an infection; or we find a disease which seems to be peculiar to a region though not an infection; or we have a case which baffles us. These, perhaps, we have not time to inquire into very scientifically. These it is our duty to report to persons interested in investigation. We should have an interest in "finding out" about these things. Curiosity is the mother of knowledge. How should we report them? By letter giving statement of condition of affairs; of regional effect, or case which tries us. The letter might be printed, or sent to persons interested. A paper

might be written and read before a society ending with the query—what is the cause? The problem may be a grave one and of interest to the whole profession; the disease may become a menace to the agricultural interests of the whole country and a paper on it merit the attention of the National Veterinary Society. That is, the condition noticed may be of great economic consequence to the State or nation. The report of an individual from a region, published, may lead to similar reports from other men and other regions, showing the disease to be widely prevalent and yet little known about it by the general profession. The disease thus reported gets the knowledge on the veterinary forum and the individual and profession receives benefit.

(*c*) *By aiding investigators to obtain the data they desire.*

Several characteristics mark the scientific temper; first, it kindles into enthusiasm when means to obtain new knowledge for the science is outlined and explained; second, the scientific spirit shows a willingness to help freely and frankly an original investigator to obtain new light. The man who has the play of the scientific spirit in him shows an eagerness to help others, who, in a right spirited way, desire more light. This is a benefit to scientific advancement. It applies in veterinary therapeutics. Many drugs are known to have a definite therapeutic value in human practice; but their effects on animals are not known. But to obtain the data the experiences of many men must be asked for and had in our profession before safe conclusions can be reached, and pronounced as definite conclusions in scientific papers on these drugs. Again it applies in the means which must be used to accumulate data to give a preponderance of evidence to support theories on transmissible diseases. For example, in the question what is the chief port of entrance for the tubercle bacillus in the case of hogs; and, if there is one main port of entrance, what is the reason for it? This can be answered by the accumulation of data from those who are making numerous daily post-mortem examinations of hogs—that is by government inspectors. The question is worthy of an answer. Again it applies in

the means which must be used to accumulate evidence to support scientific judgment on the distinctive value of disinfectants—an economic question in veterinary hygiene and prophylaxis. For example, only recently, as a result of the accumulation of evidence has the Government dared to pronounce on the Beaumont wash as a safe destroyer of the Texas fever tick. None of these questions can be settled by one man's experience alone. They must be settled by the accumulation of data, the results to be embodied in scientific papers on veterinary therapeutics, sanitary science and sanitary police.

V. Conclusion.

When in an easy chair we sit thinking of some of the signs of progress amongst us and images float by marked "raising of the standard," "recognition of merit," we begin to feel that there are glimmerings of social change amongst us for the better, the perfection of scientific methods looking towards recognition of the value of our science to the municipalities, the States, the nation. Then when we are at work we are apt to gloat over our progress and take on not a little swagger that we are reaching our stature as truly scientific men.

There is a strong pulsation in the veterinary body on this continent which omens well for the production of a healthier professional activity and a truly scientific spirit amongst us. Nevertheless, just as when questions which pertain to veterinary education, or the army, arise for discussion in the American Veterinary Medical Association or in the press we find we have much to add or eliminate before further progress can be made, so a question of vital importance like this of our duty in furtherance of the advancement of science, displays even more where the veterinary body on this continent is a little faulty. My appeal is for a telling earnestness in scientific discovery on the part of individuals capable of its attempt, for endeavor which will result in the production of papers remarkable for knowledge as new as it is helpful. "Produce! Produce!! Be it the most infinitesimal particle of a product, produce it, in God's name. Work! Work, for the night cometh when no man can work."

ACCIDENTS AND SEQUELÆ OF SURGICAL OPERATIONS.

By L. A. Merillat, V. S., Chicago, Ill.

A Paper presented to the 42d Annual Meeting of the American Veterinary Medical Association, at Cleveland, Ohio, Aug. 15-18, 1905.

The old adage that accidents will happen is not idle talk when applied to veterinary surgical operations. The accidents liable to occur during operations and the post-operative sequelæ are circumstances of no small import. They underlie the very life of surgery, and especially veterinary surgery. As a subject for discussion, they deserve the highest and most scrupulous consideration. In practice they must be obviated at every time. The old practitioner knows too well that a brilliant surgical career is promptly shattered by a few misfortunes belonging to this category. While it is admitted that each surgical procedure has its share of accidents and sequelæ in spite of efforts to prevent them, this fact must not be made an excuse. For the use of surgical methods that are of questionable rationality, and through which the percentage of accidents and sequelæ is raised above the normal number. To prevent accidents and sequelæ is in fact the surgeon's most potent mission. To lessen their frequency is to succeed as a surgeon; to augment them means disaster.

Each surgical operation should be approached with due regard to these two items, whether the possible consequences are of the grave or trivial character. A trivial accident may be as serious a matter in a valuable animal as a graver one would be in an animal of small value.

Aside from the accidental injury of important organs with the surgical instruments in hand, the chief accidents occurring in veterinary operations are those incident to restraint, which will forthwith receive our consideration.

ACCIDENTS OF RESTRAINT.

The large subjects (the horse and ox), owing to the use of their powerful muscles to fight forcible restraint, are the most

frequently injured. The small animals (dog and cat) are seldom caused to suffer bodily injury by forcible confinements for a surgical operation. We have in mind in our practice but a single accident to a dog from surgical restraint, and that one resulted in the death of a small Boston terrier puppy from suffocation by flexing the neck too firmly while under restraint to have its ears trimmed. We have since learned that this accident occurs frequently, and that each surgeon who practices trimming ears of dogs to a large extent, has killed at least one dog in this manner.

Restraining the horse is entirely a different proposition. In the recumbent position there is eminent danger of inflicting serious injury to the locomotory apparatus, and also the internal organs, while in the standing position there is always some possibility of straining or bruising some part of the body. The accidents we have had during the past seventeen years enumerated in the order of their frequency and importance are:

1. Fracture of the lumbar vertebræ.
2. Fracture of the femur.
3. Azoturia.
4. Facial paralysis.
5. Brachial paralysis.
6. Fracture of the ilium.
7. Injury to the temporal-mandibular articulation.
8. Exhaustion, collapse and shock.
9. Internal hæmorrhage.
10. Colics of the trivial character.
11. Grave colics and rupture of the abdominal viscera.

Fracture of the Lumbar Vertebræ.—This is one of the most serious, most unfortunate and most common of all the accidents occurring to horses secured in the recumbent position with ropes and hopples of whatever kind. It occurs most frequently in old horses, and especially in subjects that possess sufficient vim to offer forcible resentment to the discomfort of being tied; but it may also occur to animals of any age. Animals having inflammatory osteophytes in the various articulations, commonly

the seat of lesions, are particularly susceptible, as might be also said of animals suffering from osteo-porosis. Aside from these predisposing factors, the cause of this injury is always traceable to faulty or careless management of the casting harness. The accident occurs most frequently after the horse is tied, and as the struggles are made more violent by the pain inflicted with the knife, but may also occur while the animal is but half tied, either during the tieing or untieing process.

In securing horses in the recumbent position, either one or two principles must be followed:

The first is to secure the legs in the *flexed position*, and the second is to fasten them in the *extended position.* The various harnesses and side-lines, such as the Cowles, Miles or Ziegler, have for their objects the securing of the limbs in the flexed position, while the English hopples and the operating tables aim to fasten them fully extended.

When using the former, the legs must be flexed firmly and securing upon the pelvis, so as to place the strong muscles entirely "out of commission." The error which leads to this accident is that allowing the legs to remain half extended, thus making a fulcrum for leverage out of the hopples and ropes by leaving the legs in a convenient position to admit a free and forcible use of the large muscles. With the operating table or English hopples, the fulcrum is transferred to such a great distance from the body as to entirely eliminate the forcibility of such a serious result as fracture of the spinal column. We have yet to have occur, or to learn of, a single accident of this character, where the restraining method respected either one of these two principles. But when they are disregarded, the accident will, I assure you, occur with uncomfortable frequency.

Fracture of the Femur is by no means an uncommon result of surgical restraint, and may occur in animals of any age. It may occur in young animals before the diaphesis and epiphysis are firmly united; in aged animals in falling violently upon the thigh, or in the middle aged from struggling violently with a partially released leg. In the young animals, being operated

on for hernia, castration, etc., special pains must always be taken in view of this possibility. In aged horses the bedding must be made to offer ample protection against a possible violent fall, as the patient is cast. And in the middle aged, and in fact any horse, where a hind limb is released with the purpose of operating upon it, care must be taken to prevent the accident by giving it some liberty during forcible struggling. Accidents of this character frequently occur from fixing the released hind leg to a ring on the wall or to a post, by means of a rope.

Azoturia is one of the possible accidents of surgery in the horse, because a brief period of idleness very often precedes operative treatment, and because the excitement and struggles, incident to restraint, is quite sufficient to provoke an attack in the susceptible subject. The prevention is simple, and too well known to mention.

Facial Paralysis.—Unilateral facial paralysis is another accident that is by no means uncommon. It is caused by permitting the subject to strike the side of the skull violently to the ground, or floor, while the operation proceeds. The injury occurs largely through the necessity of utilizing untrained assistance to manage the head. Striking the head on the floor injures the seventh cranial nerve, as it passes superficially through the mastoid region, towards the masseter muscle, and the immediate effect is the dropping of the under lip, and curving of the upper one to the opposite side. We have had one case of concussion of the brain from this cause that died some days later from cerebral meningitis. The mild cases of facial paralysis usually recover in from five to six weeks. Prevention consists of using a well-padded hood, deep bedding and good help.

Brachial Paralysis.—Either partial or complete paralysis of the nerves radiating from the brachial plexus may occur from casting the horse violently upon the scapulo-humeral articulation, the fall bruising the plexus between the joint and the first rib, which form its external and internal relations. This acci-

dent is either grave or trivial according to the severity of the injury. The severe cases may never fully recover, or death may even ensue, while the milder ones make a tardy recovery. Slight radial paralysis may result on the operating table, either from violent traction upon the leg while struggling, or from lying heavily upon the shoulder on a table improperly provided with padding material. These cases, however, make a perfect recovery after two or three weeks of faulty extension of the carpus.

Injury to the Temporal-Mandibular Articulation may occur in the recumbent position from the ropes, English hopples or operating tables, and is invariably caused by improper management of the head. It is caused in the same manner as facial paralysis—by permitting the head to come in contact with the floor. This action is quite common, but always escapes notice at the time it occurs, as there is seldom any sign of injury until after two or three weeks later, at which time the patient will begin to suffer pain while masticating food, and upon examination the region of articulation will be found tender and swollen. Forcible opening of the mouth will likewise produce severe pain. The lesion usually takes the form of interarticular abscess, which will point and discharge synovia and eventually result in a partially anchylosed joint. The other case takes the form of a non-infective synovitis, and osteitis, but always with the same results. The patient will suffer great pain, lose flesh, suffer from periodical attacks of colic, and even die a lingering death.

Exhaustion, Collapse and Shock.—These conditions are not traceable to restraint as often as to the operation itself. Both, however, contribute to their occurrence. The pain of a prolonged operation, added to the exhaustion brought about by resisting the restraint, very frequently leaves a post-operative condition which is very alarming. The subject will usually show the first signs of the condition by refusing to return promptly to the standing position, when released from the confinement, and after finally being assisted to its feet, will tremble, stagger and probably show slight pain of colic. In the mild forms the con-

dition aborts after several hours, while in others all the worse signs of shock may supervene, and threaten, if not take the patient's life. This condition is most frequently a rope and hopple accident, and follows attempt to perform long, painful operations without an anæsthetic. By using the operating table and anæsthetics, the veterinarian should have few cases of shock from the usual grist of horse operations, and when long, painful and sanguinary procedures are attempted, they are indispensable.

Surgical shock has thus far been given very little thought by veterinary surgeons. Our literature has avoided this subject so remarkably well that one would be justified in doubting its very existence, but for the fact that it is before our eyes at every turn. Shock is observable to some extent after all operations, but is of serious import only when it threatens life. In equine operations, it is seen chiefly after the treatment of large, lacerated wounds, the ablation of large tumors, the evacuation of intestinal gas, or thoracic fluid, the return of a strangulated hernia, the reposition or amputation of an inverted uterus and, in fact, any operation of sufficient magnitude to disturb the equilibrium of the circulation. Serious shock is the result of major operation, in which it is of much greater frequency in animals than in human operations. Our disregard for this condition is due to the dearth of major operations performed, as well as our failure to recognize shock, as such, when it occurs.

In discussing this condition, a slight distinction may be made between collapse and shock. The former is but an exhaustion of the nervous system, occurring during or immediately after the operation, while shock is seen from 30 minutes to 4 hours later. In the human being it is often observed as late as the third or fourth day following the operation, while animals that escape it for four hours may safely be pronounced out of that danger.

To properly appreciate shock, it is best compared with hæmorrhage, to which it is perfectly analogous, with the exception that in the former the blood remains in the vessels, while

in hæmorrhage it flows out of them. Shock appropriately defined, is but transfer of a large quantity of blood to the splanchnic vessels, that is to say, animal is bled into the bloodvessels of the abdominal cavity, whose capacity is sufficient to contain the major portion of the entire blood volume. This phenomenon results from the starvation of the other organs and periphery and gives rise to a chain of symptoms familiar to every veterinarian—namely, tremors, cold perspiration beginning about the head, rapid respiration, blanching or cyanosis of the mucous membranes, running down pulse and often colicky pains. The condition is best treated by the administration of ammoniacal stimulants, energetic friction of the body and legs and finally the prompt resort to intravenous, subcutaneous and intraperitoneal injections of normal salt solution. By prompt recourse to such measures, the mortality is greatly diminished. Prevention consists in securing animals intelligently by administering anæsthetics for operations, and of avoiding the unnecessary loss of blood.

Internal Hæmorrhage.—Rupture of bloodvessels within the cavities occasionally occur from restraining animals. In this class we have had one case of rupture of the coronary artery, followed by death as the operation proceeded, and one case of the rupture of the anterior mesenteric artery.

The former was secured with ropes and hopples in the recumbent position and the latter in the stocks. The former groaned and strained violently throughout the operation, which was one of short duration. The latter plunged violently in the stocks while being operated on for a fistula of the withers.

Colics.—We have frequently, while still using the ropes, had horses suffering from colicky pains upon regaining the feet after a recumbent operation, and occasionally from a severe attack, one case dying and on post-mortem revealed a rupture of the colon. Ruptures of the small intestines have been reported to us by several veterinarians. But rupture of the stomach we have never encountered or heard of.

The Rupture or Strain of the Flexor Metatarsi occurred in

two instances; one was in a pony being fired in the hock, while secured in the standing position with a single side-line. In a struggle the foot bearing the weight slipped violently backward, and upon rising, the leg hung limp in the typical attitude of this lesion. The other occurred by attempting to make a large horse rise to his feet, while still partially under the influence of an anæsthetic. In the struggle, one leg slipped backward, and as in the former case hung limp as if fractured, as he finally struggled to a standing posture. These two instances are valuable as warnings of the readiness with which a very serious and unfortunate accident may occur to a valuable horse.

Fracture of the Ilium.—We have had reports of fracture of the anterior angle of the ilium, caused by falling violently upon the hip, as the horse is cast, but we have reasons to believe that this accident is noted for its rarity.

Aside from the following grave injuries, one must always take into account those of the most trivial character. Injuries which in the common rift of animals would not be considered of any consequence, might bring considerable anxiety to the owners of valuable animals. I refer here to bruises of the orbit, hip, stifle, shoulder, hock, knee, and to rope burns on the flexion surfaces of the legs. All of these injuries should, in justice to one's reputation, be avoided by proper protection to the parts with sufficient bedding, padded operating table, or appropriately covered hopple and rope, and by using, if possible, trained assistance.

ACCIDENTS OF ANÆSTHESIA.

We have mentioned above the necessity of using anæsthetics in certain operations in order to prevent accidents, and yet we are forced to admit that our remedy is not entirely without sin in itself. In fact, the accidents of anæsthesia are legion, yes, too numerous for comfort.

Anæsthesia in veterinary surgery belongs to the domain of surgical restraint. It is used to make our operations possible.

If our dumb subjects could be spiked to the floor, so as to perfectly immobilize any seat of operation, I doubt very much

whether chloroform would ever be used in our profession. We use chloroform to protect ourselves against injury, to prevent injury to the animals, and to render possible the carrying out of certain manipulations, but seldom, if ever, to relieve pain. This condition of affairs is of no special credit to us, although it may be defended on the ground of the time and the cost to perform operations in this strictly humane manner, and on the ground of accidents liable to result therefrom.

The accidents and sequelæ of anæsthesia are:

1. Death from syncope, and asphyxia.
2. Bronchitis and broncho-pneumonia.
3. Chloroform dementia.
4. Blistering of the muzzle.

Death from Syncope and Asphyxia. The death rate from general anæsthetics in animals is high. While there are no satisfactory statistics obtainable, it is evident from reports one gleans here and there, that the deaths are much more common than they should be, in view of the few animals anæsthetized. The fact that there are few expert veterinary anæsthetists, accounts for the numerous deaths. Veterinarians, as a rule, have very poor confidence in themselves, as administrators of anæsthetics. Is it not a fact that in anæsthetizing dogs promiscuously we have an uncomfortable number of deaths, or narrow escapes of deaths? How often are we brought to the necessity of applying restoratives to our anæsthetized dogs? I have had the privilege, during the past year, to see more than 500 dogs anæsthetized with chloroform by a medical student acting as an assistant in a large laboratory without a single death, and many of these experimental animals were subjected to frightful mutilations, and kept under the influence as long as seven consecutive hours. This fact should be a valuable hint for us to practice the art in order to become proficient and thus gain confidence in our ability to administer anæsthetics without a great degree of danger. We cannot become proficient in this line by allowing anæsthesia to become more and more obsolete in our profession, as has been the case up to the present day. To pre-

vent death from a general anæsthethic requires experience. Verbal instruction alone will not suffice. An anæsthetist must acquire a knowledge of the exact action of the anæsthetic and must become an expert in recognizing that action upon the patient. He must learn to pay strict attention to the anæsthetic and give no part of that attention to the operation.

To attain the best results and kill but few animals, the veterinarian should use chloroform for the herbivora, and ether for the carnivora. Chloroform is apparently safe for the horse and ox, but is dangerous for the dog and cat, for reasons I am unable to explain; while ether in the horse and ox is treacherous, inactive and unreliable. Mixing anæsthetics does not help matters, but instead increases the danger. In administering chloroform to the carnivora, an alarming number of deaths will occur from asphyxia, unless the anæsthetist has had a wider experience than any veterinarian under ordinary circumstances can ever hope to attain.

The course that has given us the very best results in the horse is that of dieting the subjects for 24 hours, and if a fat phlegmatic patient, a course of purging, exercising and dieting, covering a period of several days, prior to the time of operation. The chloroform is then administered with a sponge, capable of holding 2 to 3 ozs. of chloroform without dripping. This is held to the nostrils by means of a rubber sheet held firmly around the muzzle. The patient is made to inhale pure chloroform during three to five inspirations, and then a little air is admitted, until the surgical stage is reached. Prior to all of this, the surgical field has been prepared for the knife, so as to shorten the period of anæsthesia. And herein lies the success of horse anæsthesia. There are a few equine operations that consume much time, if all the preliminary steps are already executed. For example, in a foot operation: the horse is cast, the legs secured as desired, then all of the non-painful work is carried out—that is, clipping the hair, disinfection and paring of the hoof. Now being prepared to inflict the pain, the patient is carried promptly to the surgical state of anæsthesia, as above

mentioned. The cutting is promptly executed and finished in 99 per cent. of the cases before the patient revives sufficiently to require more of the anæsthetic than was originally given. The dressing and bandaging is usually performed as the patient revives; that being completed, the subject is almost ready to regain the standing attitude, when the dressings have been adjusted. Whenever it becomes necessary to prolong the anæsthetic state, the drug is given in but one nostril and in small quantities. In summarizing this subject, we would suggest the following recommendations:

1. Prepare the patient by careful dieting, according to the condition of flesh, and of the alimentary canal.

2. Execute all the preliminary steps of an operation before administering the anæsthetic, in view of shortening the duration of the anæsthetic state.

In short make every effort to reduce the duration of the unconsciousness.

3. In the ordinary case administer 2 to 3 ozs. chloroform with comparative rapidity, first without air, and then after 3 to 5 inspirations allow a little air to pass through one nostril.

4. In subjects suspected of having any abnormality or condition that might provoke syncope administer the chloroform slowly and in smaller quantities.

5. Use the very best quality of chloroform, and always, when possible, out of the freshly opened vial.

6. Avoid the use of chloroform in weak and debilitated subjects or in animals that have been under treatment with narcotic drugs, such as aconite, belladonna, opium, cocaine, etc. The same general recommendations will apply to etherization of carnivora.

Bronchitis and Pneumonia.—Chloroform and ether in the gaseous state are quite irritating to the aerial mucous membrane, and are hence quite liable to provoke serious inflammatory condition of the air passages. A slight cough is always observed after operations performed under anæsthesia, but especially after a prolonged state of anæsthesia. Chloroform pneu-

monia is not as common in animals as in man, largely because of the shorter duration of the operations, and possibly on account of the greater resisting powers offered by animals against pneumonia. It is seen in animals that have been kept under the influence too long, in debilitated subjects and in those exposed to infectious diseases of the air passages (shipping fever, etc.), and is comparatively rare where common sense dominates administration.

Chloroform Dementia occurs as in the two foregoing accidents from prolonged use of the anæsthetics. It is observed immediately after the operation. The subject instead of promptly reviving from the narcosis becomes delirious, will fight with the limbs, and if made to rise, will push the head to the wall, and act much as an animal suffering from staggers. The milder cases recover after several hours, while severe cases owing to the condition being aggravated with more or less shock will succumb. The condition never follows brief anæsthesia.

Blistering the Muzzle.—Chloroform will irritate the integument of the lips and nostrils sufficiently to warrant the use of a preventive measure, which is found in the simple precaution of anointing the muzzle in vaseline, prior to the application of the sponge.

With these few commonplace remarks about restraint and anæsthesia which in veterinary surgery belong to the same category the general section of our subject will conclude with a brief reference to the great accident of "microbian infection" of surgical wound.

MICROBIAN INFECTION.

Blood poisoning, suppuration and a few of the specific infections occur with remarkable frequency after veterinary surgical operations. In fact, few operations escape this accident, which owing to the frequency might better be designated as a universal incident. The soiled condition of everything around a veterinary surgical operation is a dominating cause that cannot often be entirely eliminated.

Among the accidents, or rather sequelæ of this character we have had follow our operations, are:

1. Infective inflammation leading to suppuration.
2. Infective inflammation leading to acute septicæmia or pyæmia.
3. Infective inflammation leading to extensive necrosis of the surrounding tissues.
4. Infective inflammation extending into vital structures, *i. e.*, the peritoneum, synovial apparatus, etc.
5. Tetanus.
6. Malignant œdema.
7. Glanders.

Infective Inflammation Leading to Suppuration.—The suppurating process is such a common sequel of surgical operations upon animals, that it is ordinarily taken as a matter of course. Veterinarians are not very often surprised when their wounds discharge a purulent secretion. They expect it. The exception is found in a few clinics, where exceptional efforts are made to prevent it. I am referring here to the usual operation performed in the routine of the most veterinary surgeon's work. The prevention requires the inauguration of such tedious measures, and its occurrence is usually regarded as such a trivial affair, that very few veterinarians use their best efforts in that connection.

The graver infections enumerated as No. 2, 3 and 4, which are caused by the same infection as simple suppuration, but which are less frequent because of the great resistance of the domestic animals against them, on account of their infrequency, do not alarm the veterinarians to the same extent as the human surgeon.

In a city practice, however, where large numbers of operations are performed on animals, in all conditions of health and vitality, these grave afflictions command considerable respect. It is not unusual to have deaths follow such operations as trephining the skull, operations upon fistulæ of the withers, poll-evils, quittors, shoe boils, shoulder tumors, etc., because grave

septic infections have transgressed into the surrounding structures, and have created fatal systemic disorders.

To lessen a number of these sequelæ is an absolute and momentous necessity. Suppuration, unless extensive, is ordinarily harmless, so far as destroying life is concerned, and, in fact, actually acts as a defence against graver developments of a given infection, but when the same organisms which cause it are very virulent or find a fruitful field from the lowered vitality of the tissues just operated upon, or from the low vitality of a debilitated subject, there is always danger of provoking the grave microbian diseases. It is, therefore, evident that there are reasons to use preventive measures against infective inflammations in all veterinary operations. But what constitutes an infective measure in preventing microbian invasion into our surgical wound? Aseptic work? No! Aseptic work has been tried in veterinary practice, and has been found wanting. Practical experience in this direction directs us to advocate antiseptic work. The liberal, and, of course, intelligent use of antiseptics of high potency offers the only solution of this problem. While it behooves us to be scientific in the interest of the nicety of our craft, we must also be practical enough to apply methods which will fill the bill, from all standpoints, including the cost, speed and the results.

Let us see what can be done in the direction of overcoming the terribly soiled condition of the environment, the patient, the surgeon's hands and the surgical instruments.

Given an operation, say upon a shoe boil, in a veterinary hospital of ordinary cleanliness, or if you choose in a livery stable, or farm barn. To make matters as bad as possible, let us suppose that the shoe boil has been lanced, and is discharging pus. Such a subject will furnish the most intricate surgical problem confronting the veterinary practitioner, who aims to respect intelligent technique, and if successfully mastered the solution of the problem should apply to the treatment of any of our surgical wounds.

We should first learn to cope with :

The Air, in which we are forced to operate. On the farm, out of doors, in a grass plot the best surroundings are found. If indoors the place must not be dusty. Shaking up a straw bed just before operating is not an exemplification of sound surgical knowledge, although it is one of our most common errors. In the hospital or stable, of any type, the operating room can be made free from dust in a few moments by sprinkling the floor and air with some cheap antiseptic, like creolin. Whatever method is used, the surgeon must not neglect the principle involved, and that is that the air of city stables, and straw or hay dust, such as would be used for a bed in the country, are bearers of dangerous microbian infections.

The Surgical Instruments.—The second item to be considered is that of disinfecting instruments. In the hospital where a heating apparatus is at hand, boiling is not an impractical method, but the most sensible and rapid method of dealing with them, is to immerse them in a 95 per cent. solution of carbolic acid, for a few moments. A salt-mouth jar protected at the bottom with some soft material, like rubber, cork or cotton to prevent dulling the edged instruments is the most convenient. Instruments may be kept in a jar as the patient is being secured, and otherwise prepared for the operation and just before using them they are taken from the jar with a forcep and placed into the instrument tray, or upon a clean towel. This mode of disinfection is practical and effectual.

The Hands.—The third item is the hands of the surgeon. The veterinary surgeon's hands are always dirty. None of us have surgically clean hands at any time, especially if we are handling the dirty ropes and the dirty patient just a moment before the surgical wound is made. Systematic disinfection of the hands is both impossible and impractical. Impossible because they are always putrid, and the time is too short to clean them, and impractical because valuable time would be lost if an attempt is made to do so. The solution of this problem is found in avoiding digital manipulations. Keep your dirty hands out of your surgical wounds is a mighty pertinent command, homely

as it sounds. We must learn the appropriate use of the dissecting forcep, the tissue forcep, the wound retractor, the tenaculum, the needle holder, etc., and thereby dispense with the digital manipulation.

It is seldom necessary to touch a surgical wound with the hands.

The Patient.—Next comes the patient, which, by this time, has been properly secured. I say properly secured because the prevention of microbian infection depends largely upon having the seat of operation under good control. Flying particles are thus prevented from falling into the wound, and the technique can be more hurriedly executed.

The seat of operation is then washed, clipped and shaved, and the surrounding parts are moistened with water to prevent loosened hairs from constantly falling into the wound. The surgical field itself is then washed with a strong antiseptic solution. For this purpose the solution should be powerful. A 1 per cent. solution of mercuric chloride is none too strong. In such a strength it is effectual and still harmless.

The Operation.—The dissection of the tumor proceeds with the assistance of retractors, hooks and forceps, without touching the parts with the hands. The sponging is done with an antiseptic solution, but care is taken to keep any antiseptic liquids from coming into contact with the wound edges. These edges, when brought together, must heal by primary union, and if sponged with an antiseptic of even nominal strength will lose its regenerating vitality, and unite poorly, if at all. Never sponge the edges of a surgical wound with an antiseptic when prompt union is expected.

The putrid area of the shoe boil; that is the walls of the abscess will be all dissected out, except possibly the anterior wall. This may be sterilized with very strong antiseptic, the hot iron may even be used. We often use the hot iron here for the double purpose of arresting the hæmorrhage and destroying the microörganism of the abscess wall, but at no time should the wound edges be molested. Their vitality must be preserved.

The edges are then brought together with appropriate sutures, using the needle holders and forceps.

The patient is then returned to the standing position, and the sutures covered with some form of plastic dressing. Such a wound will again become infected on its inner aspects, but not until the edges have safely united.

This case is related here to illustrate a brief method of preventing microbian infection in a practical manner on veterinary subjects operated upon in unclean surroundings, where aseptic work would be impossible. There are many details of some importance that might be properly mentioned here, if space would admit, but these are left to the surgeon's ingenuity.

SPECIFIC INFECTIONS.

Accidental infection with specific organisms, is of somewhat rare occurrence in veterinary surgery. Our wounds are not endangered to any considerable extent with tubercular bacilli and anthrax, black quarter, malignant œdema and glanders are rare sequelæ of surgical wounds. Tetanus, however, occasionally follows our surgical operations. Docking the tail, castration, and puncture firing are the special operations most likely to be followed by this affliction. The prevention in addition to the usual fight against microbian infection, consists of the free exposure of the wound, and the use of tetanus antitoxin. In castrations the tetanus bacillus is carried into the depth of the inguinal canal with the soiled ecraseur chain, emasculator or clamps. In docking they come from the infective stable floor, finding a favorable soil beneath the escar. In the puncture firing operations they are carried beneath the skin, which structure they inhabit, by the hot iron ; the escar forming a suitable place for propagation.

In addition to these operations tetanus may follow accidental wounds, surgically treated. It is therefore advisable in practice to take careful steps looking to its prevention, when there is some danger of its occurrence ; that is, where the districts where it is prevalent, in the treatment of the kind of wounds that are

liable to cause the disease, and especially in the treatment of wounds of valuable animals.

A second specific infection we have observed on two occasions is that of malignant œdema. In each instance it followed surgical incisions about the withers. One case followed a severe operation for fistula of the withers that was carried out with ordinary care as to surgical cleanliness. The second case followed a simple operation upon a saddle sore.

Malignant œdema, like tetanus, is due to a microörganism of the anærobic variety—the *Bacillus œdematis maligni*—which is quite widely disseminated in dusty places and must, as a consequence, be taken into account in veterinary operations performed indoors. The disease follows accidental wounds, or operations, that admit organisms into the subcutaneous areolar tissue. Wounds about the shoulders, elbows, or withers seem to give the greatest number of cases.

The disease is very fatal, and unless discovered early will rapidly develop beyond control. It is recognized by a very painful œdematous and emphysematous swelling, appearing at the seat of infection, in addition to a marked systemic derangement from the very beginning. Its course is a short one. Death occurs in from 24 to 48 hours after the appearance of the first symptoms. When the disease is recognized early, its progress can be controlled by free incision of the skin over and around the swelling, so as to admit air freely into the surrounding tissue not yet invaded. Free injections of hydrogen peroxide is also effectual as additional treatment. At best the favorable cases make a very slow and tardy recovery, covering several weeks.

THE BURSTING OPEN OF SUTURE WOUNDS.

Is there any accident, sequel or incident in surgery any more provoking than the breaking open of the suture wound?

This accident is about as frequent as the wound itself. That is to say, almost all sutured wounds in large patients break open instead of uniting. An old practitioner once told me that he had no recollection of any suture wound ever uniting in his

practice covering a period of more than a quarter of a century. He sutured all wounds requiring such treatment, but always provided his clients with directions for the open wound treatment that would surely be necessary in from three to six days on account of the inevitable parting of the sutured edges. Is this not practically the experience of all veterinarians? We suture wounds only to see them break open after a few days. The only exception is wounds on the forehead, acnestis, or croup where the parts are in the perfect state of repose that is essential to prompt skin union.

The causes of the difficulty in this connection, are:

1. *The Friction* between the approximated edges, caused by the patient's movements. Wounds located upon the limbs or over the large muscles are not easily immobilized and therefore do not permit the formation of the new uniting tissue necessary to prevent parting of the edges.

2. *Pyrogenic Infection* may also contribute to the bursting of stitches. Although an infective wound may unite fairly well, it usually follows the usual course of bursting open in a few days.

3. *Tension of the Stitches* which press upon the tissues and cause stitch necrosis, and, of course, opening of the wound therefrom. These three causes—that is, motion, infection and stitch necrosis—work hand in hand in many of our wounds; not practically all of them. They present a problem that is difficult to solve. We must first attempt to cope with the first obstacle —motion—by suturing the wounds and managing our patients in such a manner as to prevent motion between the edges of wounds. Keeping the patient in a single position for a few days or immobilizing a joint or limb by bandages will always materially assist in accomplishing the purpose. This, of course, must never be omitted, although that precaution alone will never be sufficient. It is also necessary to arrange the suture to the best advantage. In most wounds two separate sets of sutures are necessary. One set of the *matress* or *button* variety should be adjusted some distance from the edges of the wound

with the intention of creating an immobile area within them. The second set unite the edges themselves. They should be so inserted as to bring the raw surface of the skin together, and never in-fold the skin, as stitches are very apt to do. This set of stitches must be of very fine thread, inserted with a fine needle, and must never be taut. They may then be applied very close to each other without harm.

This method prevents stitch necrosis and motion to the highest possible degree. Infection is prevented by cleanliness, antisepsis and drainage. When stitching an unshaved skin, or one that is none too clean, it is good practice to pass the needle from within outward, so as not to carry infective matter upon or within the skin, into the depths of the wound. This method necessitates frequent threading of the ueedle, but it is worth while, in view of the better results obtained. Another item which materially lessens the danger of infecting wounds or sutures, is that of threading as many needles as will be required to close a given wound. Each needle should be made to hold enough thread for one stitch, and neither it or the thread when once placed upon the needle should again be touched with the fingers, and all suturing should be done with the needle holder and forceps.

Two New Jersey veterinarians—Dr. Henry Vander Roest, of Newark, and Dr. J. B. Finch, of Ramsey—have recently become enthusiastic owners of automobiles. These veterinarians use their automobiles in making their calls. If the case be one of urgency and the usual break-down occurs, they may have to walk the remaining portion of their journey. Not many would be sorry for them.

RATIONAL DEFINITION OF AMATEUR.—An amateur as defined by the Louisville Horse Show Association, is one who has never taught riding or driving or trained or dealt in horses as a business, or ridden or driven in public for a consideration. Broader than the Newport rule yet strict enough to exclude out and out professionals, the Louisville definition seems an admirable one, worthy of being adopted everywhere. The question as to who is an amateur gives rise to dissensions at horse shows year after year.

TWENTY-SEVEN YEARS' EXPERIENCE IN VETERINARY PRACTICE.

By John V. Newton, V. S., Toledo, Ohio.

Read at the 42d Annual Meeting of the American Veterinary Medical Association, at Cleveland, Ohio, Aug. 15 18, 1905.

To the Officers, Members and Guests of the American Veterinary Medical Association :

You will pardon this brief history of my professional life. I do not like to talk about myself, but it is no doubt more becoming than to talk about others, sometimes.

In the spring of 1876 I desired to study for an M. D., so went to Toronto, Ontario, to prepare myself for matriculation examination to enter the Toronto School of Medicine. In September I started to attend lectures, worked in the dissecting rooms, and secured books, etc. I think it was the first Monday in November that I went to the opening lecture of the Ontario Veterinary College, having a cousin who was there the last year.

Prof. Smith and my cousin persuaded me to make a change and study for a veterinary instead of for an M. D., saying I could get through in two years instead of four necessitated on taking the regular medical course. I was also told that in the veterinary profession I could get a good practice at once, whereas the medical profession was overcrowded. I took their advice, traded my old medical books, and while my family protested, I have never regretted the change.

I graduated in the spring of 1878, there being twelve in the class. I remember well that we, as a class, feeling we had so much more to learn, went to Prof. Smith and said we would all come another term and not go up for examination ; but Foxy Grandpa soon talked us out of that. I spent the summer between terms with Dr. Chas. Elliott, of St. Catherines, Ontario, who had a good practice and from whom I gained much practical knowledge. After graduation, I naturally looked for a location, going to Buffalo, Detroit, Indianapolis and finally set-

tling in Toledo, Ohio, a growing city at that time, of 40,000 inhabitants, and not a qualified man in it. I visited all the so-called veterinaries and found them all doing business and Oh! such a business. It really made me feel ashamed of my chosen profession. Take a mild case of colic that would recover itself if left alone. In the absence of the owner they would take a little spirits of turpentine and run it between the legs to keep up pain, etc., and never cost owner less than a ten spot. It makes me smile when I think of the treatment for colic in the early days. Not a catheter or dental float in the city; but it is different now.

I was well dressed and had no bad habits at that time, and made it my business to call on the leading horsemen of the city; but they all seemed to look upon a man who claimed to be a veterinary with suspicion, which was a little discouraging to a bashful young man who didn't know a person in the city.

I finally made the acquaintance of the most prosperous veterinary, who was doing a business of $3,000 a year. His instruments consisted of a pair of fleams, a drenching horn and injection pump. He proposed that we go into partnership. I finally consented, getting books, instruments, etc. This partnership lasted two weeks and was dissolved by mutual consent. I rented a barn and office and did a good business from the start. A day or two after moving into my new place, I had occasion to call on my former partner, and was somewhat surprised to see a large coffin painted on the wall with skull and cross bones and labeled

"John V. Newton. Laid out Stiff."

I am still on earth.

I have always attributed my early success to a great extent to two cases. I had these while in partnership. The first was that of a valuable Kentucky mare, the property of a prosperous merchant, who came to me to examine her eyes. After a careful examination I told him I could do nothing to permanently benefit her, but I could give him a soothing wash, although the mare would eventually be blind. He was astonished and said

he had several horse doctors examine the mare and they all told him they could cure her and that he had spent over $100 trying to effect a cure. Now, what this man did to advertise me for telling the truth was a plenty.

Second case. Thos. Cox, owner of the Transfer Company, called me in one day and said:

"Young man, I want to see if you can tell me what is the trouble with a valuable mare I have."

I found a beautiful bay mare, worth $500, discharging from one nostril. In placing my hand in her mouth I found the third and fourth molars receded in jaw. I told the groom to take her back to the stall and the owner looked at me and said:

"Well, young man, do you know what the trouble is?"

"Yes, sir," I said. "She has a diseased molar."

"What can you do for her?"

"Remove molar."

"All right. When?"

"To-morrow at ten o'clock."

To say I was nervous at operating is putting it mildly, as I had never operated or seen it done; but I read up what little I could find and referring to my college notes I made up my mind to tackle the job, although, as some of you know, at that early day we did not get much instruction in dentistry.

I ordered the mare to have no food or water, and at 10 A. M. next day I found doctors, lawyers, preachers, business men, etc., on hand to witness the operation. I scarcely knew whether I was on foot or on horseback, but went to work as if I had operated many times, and, strange to say, got along fine. When I removed trephine, oh, what a beautiful flow of pus, and when I punched the diseased teeth into the mouth the fourth was bad and the third bad enough. The owner showed the teeth to the crowd and said that every horse doctor in the city had examined the mare and that he had paid $60 to a Detroit veterinary who made three trips to see her and was treating her for ulcers in the nose.

"This young man," he told the crowd, "told me in less time than it takes me to tell you what the trouble was."

From that time until 1893 I had more professional work than I could do. In the fall of that year I was elected County Commissioner and in the fall of '99 I was elected Sheriff. I kept an assistant and did some professional work when I was in office, but I think it a mistake for any of us, if we have good business, to go into politics. In my case it proved all right as in '93 we had a depression in business and horses were so cheap they were not worth doctoring. In the first year of my professional life I had an amusing experience with one of the local veterinaries and an alderman of the city. In his absence I was called in to see one of his patients and he was telling his fellow-councilmen about it and said "There was a new horse doctor in the city, boys.

"He was called in to see one of my patients while I was in New York last week, and what do you suppose I found him doing? When I got back he had a barometer in the horse's rectum, taking his temperament."

This same veterinary was on the witness stand in a horse case and the Judge asked him what his occupation was? He replied, "I am a Veteran Surgeon, Your Honor."

"Well, Doctor, what did you give the horse?"

"Some digitalis, Your Honor."

"What would be the action of that drug on the animal?"

"Your Honor, it would be soothing to the mind, comforting to the bowels, tonic and Iodine."

You will pardon me if I mention two other cases in reference to the purchasing of horses. Mr. M. sent me word he would be at my office at 2 P. M. to have a horse examined for soundness. While I was eating dinner a party called at the house and said he must see me at once. He said he had sold the horse for $450 on condition that I would pass on the horse as sound and if I would overlook a little defect he would give me $100 beside my fee for examination for soundness. I did not ask what the defect was, but told him I would give the pur-

chaser my candid and best judgment and would not take his money.

He was amazed and said the horse was a good one but a little off in wind and would never hurt him and that I could never make $100 any easier. I examined the horse and found him a roarer. No sale. No $100, but had two good friends ever since.

As to the second case, a Mr. M. called on me and said he wanted me to go to Jackson, Michigan, to examine a pair of horses for his father-in-law, who would meet me at the hotel. I was very busy and said I would rather not go. He replied that I must try and go as Mr. B. wanted me there in the morning and was able and willing to pay me well. So I went and met Mr. B. in the morning. He said:

"I do not want Mr. D. to know I sent for you, so I will introduce you as a friend I met at the hotel."

On going to the stable I found a fine pair of bay four-year-old geldings. I examined them closely and found them sound and free from blemishes of all kinds, but the off horse's feet were rather light in quarters. Mr. B. asked the seller to hitch the team, which he did, and wanted Mr. B. and myself to take them, but Mr. B. said:

"No, I want you to show the team to my friend."

As we drove away from the stable the oily dealer said to me, "I know the old man telegraphed for you yesterday. If I sell this team I will make you a nice present." I replied that I was acting for Mr. B. and if he sold the team he would owe me nothing. He insisted that he would still make me a present if he sold the team. When we returned to the stable Mr. B. called me into the office and wanted to know what I thought of the team. I explained to him that they were sound and a fine pair, but I was afraid the off horse would not stand the pavements, and that I was afraid they were too high-lifed a pair for him and I would not advise him to buy at the price of $1,250. He said he liked them and would call Mr. D. in to see if he couldn't buy them cheaper. So he commenced to tell owner

how cheap he bought horses, as low as $350, and that he had won more than that in prizes with them and he ought to sell them cheaper. The seller replied:

"I would rather you would not take this team at price named, as some man in New York will be glad to give me $3,000 for them next spring." Finally Mr. B. bought the team for $1,250.

When I returned home I met two dealers.

"Hello, Doc, did the old man buy the team?"

"Yes."

"Well, how much did you get from D.?"

"Not a cent."

"You ought to have gotten $200 at least. You are easy. You won't do. Get the money when you make a sale like that."

I charged the purchaser $30 and expenses, and when team was delivered the oily dealer came to my office and put five ten dollar bills in my pocket. I told him he owed me nothing, but he replied that he was satisfied, and that he might want to sell another pair some day.

Mr. B. had a handsome pair and in three weeks sent for me one Sunday evening to see the off horse. He had driven him about twenty miles and had both inside quarters bursted. Treated them and put on bar shoes. In about three weeks more the same team smashed a $1,000 carriage to atoms and permanently disabled the off horse, and, strange to say, that ended my horse business with Mr. B. He never liked me afterwards. I never in my life would act as agent for buyer and seller. It is not honest.

If I had my professional life to live over I would rather never examine a horse for soundness; but you have to do it and my advice is, be thorough and honest with both buyer and seller. If you condemn a horse for unsoundness the seller as a rule admires you for it. If he is too narrow and dishonest to do so you do not want his trade or friendship. We should never give a certificate for less than five dollars. Make that your lowest fee and you will not have much trouble.

Another thing I would never do if I had my professional life to live over again is that I would not mix up in any patent medicine deal. It is a great mistake. I believe too that most of us are not particular enough about keeping our infirmary and office neat and clean. It pays to do so and to have our own buggy and harness and horse right and to be neat about our own person. It helps us in our business, gives a tone to the profession and a social standing to our business. I often think that it is not to be wondered at that our profession is not respected as it ought to be as I frequently call on some veterinary and find him looking like some stable man. Office, infirmary and everything about untidy and often very dirty. We ought, too, to be particular about putting up our medicines in clean bottles. Write the directions plainly and do not wrap it up in some old newspaper. That makes our profession look cheap.

I am also anxious to learn and for twenty-seven years have been on the lookout for a cure for azoturia. Of course they get well, but many die in my hands that I know should recover. The President of the O. V. M. Association called on me last spring. I had a disagreeable patient and was going to perform ovariotomy and he said, "Doc, remove her clitoris. That will do the business;" and to my surprise it worked fine and I have operated on one or more a week. It's the old motto, "Never too old or too wise to learn." I will not take up any more of your valuable time. Yes, gentlemen, we have much to be proud of in looking over this intelligent audience. I am proud to be a member of the A. V. M. A. I always feel proud of our chosen profession when I attend these meetings. I am proud of the AMERICAN VETERINARY REVIEW. I have the first and last published. The thought suggests itself to me that this Association might be of more benefit to its members than it is now. Own a code of ethics and prohibit display ads., etc. If this Association would have an authorized cut the size of a dollar or smaller if you please, and have inscribed on the margin of same, "Member A. V. M. A.," to be used on our cards and stationery, would it not be a help to many? I am so old I do not need it.

DR. VON BEHRING'S BOVOVACCINE AS AN IMMUNIZING VIRUS.

By Claude D. Morris, V. S., Binghamton, N. Y.

Presented to the Fifteenth Annual Meeting of the New York State Veterinary Medical Society, Sept. 12-15, 1905.

In bringing to your attention the question of an immunizing virus as a medicant in treating bovine tuberculosis, I am asking of you to take note that in the realm of medical science another step has been taken, which not alone adds to the glory of scientific achievements, but by a larger measure adds to the health and wealth of mankind. I assume it is generally known that during the last decade an effort has been undertaken to find a protective agent, an immunizing virus in the wide-world effort to exterminate tuberculosis. This great and lofty aspiration has reached the first step, to say the least, in its development toward ultimate fruition.

If man can be immuned against small-pox by inoculation with living cow-pox bacilli; if cattle can be immuned from anthrax with similar methods, even if anti-toxines, the product of pathogenic bacteria do mitigate the ravage of a communicable disease, and also if a toxine is serviceable as diagnosing infectious and communicable disease in cattle, surely we must feel that this theory has a strong foundation to rest upon. It is the function of the medical art to not only cure disease, but to take such means as will alike prevent its propagation. Tuberculin can serve but one purpose. It will unquestionably tell us of the existence of tuberculosis, but it in no way points to its extermination. The idea that all cattle reacting from tuberculin should be slaughtered is not sound in theory or practice, and up to the present time this idea is largely in vogue. I believe we are now about to enter upon a larger conception of a large question. The step of positive diagnosis has been taken. To lessen the disease or extinguish it is the next step. The latest investigation offers a virus as the means to be taken in this accomplishment. About 1891 Professor von Behring, of the

Marburg Institute, began an experiment with bovine and human tubercular virus. The extensive experiments carried on by von Behring cover every phase of the work accomplished along this line, the details of which are too great to discuss in a paper of this sort. I can only allude to the general results.

The inoculating virus which Professor von Behring has named "Bovovaccine" "consists of living human tubercle bacilli, whose action have been accurately tested. The tubercle bacilli have been dried without losing their vital powers in any way. These dry tubercle bacilli, kept in sealed glass tubes, will retain their action on cattle unchanged for a period of thirty days, after which time, although the immunizing power is not entirely lost, it has become so weak as to render it ineffective in the dosage recommended." There is a perfect analogy between this culture of live human tubercle bacilli with that of Jenner's small-pox vaccine, or virus. A serum with live bacilli capable of generating specific disease, is called virus. In this case it is human tubercle bacilli in the virus. Dr. von Behring has named the treatment the "Jennerization" method in honor of the progenitor of vaccine.

"For the injection the bovovaccine is uniformly mixed with a freshly boiled and cooled 1 per cent. salt solution, which is done according to the following: The entire contents of a tube, 20 immunizing units, are placed in a mortar and crushed with the pestle; then 2 to 3 c.c. salt solution are added and the mixture is rubbed until a uniform emulsion has been obtained. This emulsion is poured into a graduated cylinder holding 50 c.c. The mixture in the cylinder is then made up to 30 c.c. and poured into a wide-necked sterilized bottle holding 100 c.c. The bottle then contains the inoculation substance ready for use, 2 c.c. of which will be the dosage for the first inoculation of a calf. For the second inoculation the dose would therefore be contained in 10 c.c. of the fluid, which is five times larger than the first dose. The ready emulsion should be used as soon as possible, at the latest within 24 hours after it has been made."

The injection of the virus is easily done. Clip the hair over the upper third of the left jugular vein, cleanse the parts with a 2 per cent. lysol solution, compress the vein with the thumb until a distinct enlargement appears, then insert the canula, and if the vein has been punctured blood will flow freely from the canula; if no blood comes partially withdraw the canula and reinsert in a slight direction from that of the first. Do not attempt to inject the virus until you are sure the vein has been properly punctured. This much done, unite the syringe with the canula (which has been previously filled with the virus), and slowly inject its contents into the vein. Immediately after injection the parts should again be cleansed with lysol solution. With this done nothing further is necessary. The vaccination for tuberculosis, like that for anthrax, is done in two installments; the second injection follows three months later. The stability of the virus is such that enables it to withstand much of adverse condition without fear of deterioration.

The records of treatment by this method show that a large number of cattle have been inoculated in several States in Germany. This immunizing method has received the sanction of the agricultural law in Hessia, Oldenburg, Mecklenburg and the kingdom of Saxony. We will not attempt to present details of the result, but suffice to state that, the result so far obtained has put the treatment within the sphere of what seems to be positive results. The first publication of Professor von Behring's method appeared during the year 1890. In the Summer of 1892 he held a course at his institute at Marburg, in which a number of veterinarians participated, among others County Veterinaria Schmidt of Giessen, Hessia. The Hessian government authorized the latter to test Prof. von Behring's method at an estate in the neighborhood of Grünberg. In order to prove the success of this method of immunization, he requested Dr. Eber, Dr. Schlegel and Dr. Lorenz, to aid him in this experiment. The result was very satisfactory. If we are to take Dr. Lorenz's statement, in which he relates, "After all that I have so far seen, I am under the impression that here we have

a method which insures success. This method is of immense value, and surpasses all others as to cheapness and easiness of application. It will supercede all previously proposed methods and render them absolutely superfluous.

"It is needless to mention that the successful suppression of cattle tuberculosis is of vast importance in the breeding of cattle. It would release agriculturists from a burden which has hitherto rested heavily upon them." In the United States this loss amounts to millions of dollars yearly.

"We must also take in consideration and calculate the loss in the production of milk, insufficient assimilation of food, and the lower percentage of nutrient substance contained in this milk, and last, but not least, the threatening danger of disease to humanity."

As evidence of my confidence in Dr. von Behring's immunizing virus, I have caused to be inoculated 12 calves, and have placed with that number 12 other calves for control. The first inoculation occurred July 10th. The data of the work on that occasion is brief, but withal interesting. Initial temperatures were taken, which were uniformly at 102 degrees, with one exception, which was at 105 degrees; this was in a small four-weeks-old calf. Clinical temperatures were taken daily for five days immediately following the inoculation, and was uniformly at 103 degrees, including the morning of the fifth day, with the exception just noted. In this calf the temperature fell to the normal on the third day. The average reaction was one degree for five days. The calves for this experiment were selected at random in the heart of a tuberculosis district, and in all probability came from herds that are tuberculous. Be that as it may, it is not so essential except from the point of predisposition, which would govern in a measure a varying degree of natural immunity. The experiment will be carried on along the course of natural infection.

TWENTY-FOUR STATES now have laws governing the practice of veterinary medicine.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

HYDRO-THORAX—A CASE-REPORT.*

By ROSCOE R. BELL, D.V. S., Brooklyn, N. Y.

It would probably have been more comprehensive to have given as a title for this case-report, "exudative pleurisy," since the case in question was of such a nature. The term "hydrothorax" is very vague, meaning a collection of fluid in the thoracic cavity from various causes, usually as a result of chronic disease of some of the internal organs.

It may be considered by many of those present that there is little in such a condition to warrant the bringing forward of this subject before practitioners who frequently meet with such cases, particularly since the writer has nothing new in its pathology or therapeutics to advance. Almost every veterinarian of experience has treated such cases, many successfully, but I am sure that there are few who have had sufficient success with their surgical treatment to cause them to feel complacent when, toward the termination of the inflammatory process, they discover by physical and objective symptoms that their pleuritic patient is accumulating a plentiful supply of fluid within his chest. I know that it has been my experience to regard the recognition of such symptoms as the beginning of the end. I cannot tell how many cases of this nature have come under my observation in the last nineteen years; but I should roughly estimate the number at forty. In almost every instance I have resorted to the surgical removal of the fluid by various methods—in some instances with every known aseptic precaution and with heroic medicinal efforts. The number that have recovered under my care are so few as to make this condition one of the most grave met with in the course of practice, with as high a percentage of mortality as accompanies any condition not essentially fatal; far fewer recoveries than from tetanus, or any other usually fatal condition. Therefore, when one experiences a clean-cut, rapid and complete recovery after surgical removal of a very large quantity in a patient which closely approaches dissolution prior to the interference, it might be

* Presented to the Fifteenth Annual Meeting of the New York State Veterinary Medical Society, at Ithaca, Sept. 12-15, 1905.

well to look into the means employed and which were followed by such happy results, in the hope that something may be discovered to account for them. This case is therefore presented to you simply as a record, not as an effort to exploit displayed ability upon the part of the surgeon, but to inquire as to what factors conspired in this case to make the result different from that usually secured by him. I have no doubt each member of this body can turn to his note-book or memory and call to mind similar results, but I would not be surprised if the balance was not largely on the wrong side of the ledger.

The patient was a bay gelding, five years old, in excellent condition, the property of a large department store, and had been in the city about a year. There was in this stable at this time (June of the present year) an outbreak of influenza of a low type, and usually with pulmonary complications. Some twenty-five seasoned horses were sick, mostly with pneumonia. Ordinarily it is an exceptionally healthy stable, the horses being stalled on the second floor, with plenty of light and air, and excellent drainage. Some half-dozen "green" horses had recently been introduced, but they were not sick, or at least not seriously affected.

The subject of this report was first reported sick on the morning of June 18, when his temperature was 107.2-5, pulse 70, and with respirations of such a character that lung involvement was suspected, and a smart synapism was applied to the thoracic walls. A capsule containing acetanilid 2 dr., and digitalis 15m., was given, directly followed by 120 gr. quinine in capsule. The patient was placed under alcoholic stimulants in his drinking water, and all the usual cares in a well-regulated hospital ward.

June 19, temperature 106, 20th 106.2-5, 21st 107-106.1-5, and so it continued, dropping to 104.1-2 on the 24th, 103 on the 25th, the pulse running from 60 to 70 beats per minute. On the evening of the 27th the temperature rose to 103.1-2, the pulse to 80, the respirations had become accelerated and somewhat more labored, confirming my fears of exudation. On the morning of the 28th temperature 103, pulse 90. Quinine and alcoholic stimulants had been regularly given; Antiphlogistine applied to the chest walls every 24 hours for several days, succeeded by oil-silk under a long bandage. Acetanilid in 2-dr. doses was administered whenever the temperature reached 104 or more, which invariably reduced the fever and lowered the pulsations.

At 12 o'clock on the 28th the temperature was 103, pulse 106, respirations distressing, the whole body swaying with the effort to breathe; the nostrils were distended to their full capacity, and the patient appeared as though about to asphyxiate. At the nostrils there was a loud wheezing sound, similar to that of acute asthma. I decided to perform the operation of paracentesis thoracis, which was carried out in the following manner: The right side of the thorax was thoroughly washed in a strong hot solution of bichloride; an ordinary cæcum trocar and canula, well sterilized, was inserted between the fifth and sixth ribs into the pleural cavity. The trocar was withdrawn and the end of a rubber tube was quickly slipped over the mouth of the canula, the distal end of the tube being immersed in a pail containing water, thus obviating the danger of air being sucked in through the canula. An abundant flow of light-yellow fluid immediately began, and continued for about two hours, during which time 32 quarts were removed, leaving in the pleural cavity about 14 quarts, judging by the distance from the puncture to the bottom of cavity. After the trocar was withdrawn the minute puncture was made to close by vigorous massaging, after which the operative field was again disinfected, the seat of the puncture covered by styptic colloid, and the whole chest enveloped in a new white flannel blanket. The temperature (103) had fallen to 102, the pulse (106 when the operation began) was now 86, respirations much slower and less labored. The patient was now placed on fluid extracts of belladonna and nux vomica every three hours, alcoholic stimulants every four hours, quinine night and morning as an internal antiseptic and tonic.

At 9 P. M. the patient was much more comfortable; temperature 101.4-5, pulse 72. Treatment the same.

June 29, 7.30 A. M., temperature 101.2-5, pulse 71, respirations 21. Treatment the same, with nutrients of strained oatmeal gruel with alcohol.

June 30, 12 M., respirations very labored, temperature 103.1-2, pulse 90. Decided to withdraw the fluid from the thorax again, which was done in the same manner as on the previous occasion. Again 32 quarts were removed, leaving 14 as well as I could judge. At 9 P. M., temperature 101.3-5, pulse 66, respirations 20.

July 1, temperature 100.4-5, pulse 60. Treatment the same.

And thus the case continued, temperature ranging between 102 and 103.1-2, the pulse from 66 to 54, until July 13, when all medicines were discontinued, the patient being discharged on

the 16th, with temperature, pulse, respirations, and lung sounds normal. During this period acetanilid and quinine were given in full doses at least once a day, even when the pulse was fast and weak, and in every instance there was a preceptible improvement in the pulsations, both in number and strength, contrary to the generally accepted action of acetanilid, though in conformity with the writer's experience, which has been extensive. Stimulants were gradually decreased, though alcohol was taken in the drinking water throughout the convalescent period. When his appetite was entirely absent, strength being maintained by artificial nutrients, a bale of alsike clover was secured, which appeared to stimulate a splendid appetite, and he would consume large quantities of it, refusing all other kinds of hay, grass, mash, and grain. In a short time his desire for grain returned, and by the time he was ready for outdoor exercise he was in better flesh than before the attack.

This case is unique to me in that the horse made a rapid and perfect recovery, while other recoveries have been either imperfect or very slow. The very large majority died from empyema and general infection.

STOVAINE substituted cocaine in most all of the large clinics held in connection with recent association meetings, and in every case with the most gratifying results.

FLIES IN STABLES.—Flies are a great nuisance in stables, worrying and irritating the animals. Some years ago investigations were made to ascertain the best means of getting rid of them. An efficacious plan was found to be to wash the places where they principally settle with a mixture of alum and whitewash. The flies quickly disappeared from spots so washed, as the alum, by its astringent character, destroys the viscous substances exuded by the flies, which enables them to attach themselves to the smooth surfaces of windows and to ceilings.

MEASURES TAKEN TO PREVENT RABIES.—The veterinary branch of the Department of Agriculture has had an order-in-council passed which gives it power to muzzle or confine dogs in districts where rabies (commonly hydrophobia) is known or suspected to exist. Sheep owners near towns or villages will say "more power to the veterinary branch." Human life and reason are too valuable to be allowed to be risked because of some people's mania for dogs, and the community is to be congratulated that a vigorous hand is in control of veterinary police matters.—(*Farmer's Advocate, Sept. 15, 1905.*)

ARMY VETERINARY DEPARTMENT.

BRITISH ARMY VETERINARY DEPARTMENT.

The reorganization of the British Army Veterinary Department is to be proceeded with immediately. Under the new system the existing departmental title will disappear, those of the army veterinary services and army veterinary corps being substituted. The latter will include all ranks below that of lieutenant colonel. This change has been rendered necessary by the abolition of the regimental and the extension of the station system, which is gradually to be introduced throughout the United Kingdom. The non-commissioned officers and men of the army veterinary corps will be specially selected from the mounted arms on account of their fitness for the duties which devolve upon them. They will be attached to the respective station veterinary hospitals and be employed under the direct command of their own officers. It is claimed that this system will be more economical, work more efficiently both in peace and in war, be easier of expansion in an emergency, ensure a better selection of subordinates, and render supervision by senior officers simpler and more effectual.—(*Army and Navy Register, Sept. 2, 1905.*)

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ASSIGNMENTS OF NEW APPOINTEES.

From the results of the examinations held in May last four appointments were secured, and they have been assigned as follows:

VETERINARIAN CHARLES A. RAPP (Iowa State College), 3d Cavalry, Fort Assinniboine, Montana.

VETERINARIAN GEORGE A. HANVEY, JR. (Kansas City Veterinary College, '05), Artillery Corps, Fort Adams, R. I., for duty with the 11th Battery, Field Artillery.

VETERINARIAN R. J. FOSTER (New York State Veterinary College, '02), 12th Cavalry, Fort Oglethorpe, Georgia.

VETERINARIAN JOHN H. OESTERHAUS (Kansas City Veterinary College '05), 7th Cavalry, Philippines, and join regiment.

DR. T. EARLE BUDD, President of the Veterinary Medical Association of New Jersey, was a guest at the banquet of the Gloucester County Medical Society on Wednesday evening, Sept. 20th.

SURGICAL ITEMS.

By Drs. Louis A. and Edward Merillat, Chicago, Ill.

Pectoral Fistulæ of the Horse.—Fistulæ, discharging their purulent secretions at the anterior or inferior aspect of the pectoral region, are common abnormalities of the horse; and from the standpoint of persistence they equal, if not exceed, the other common fistulæ. In fact, a cure can seldom be effected by any form of intervention, and spontaneous recoveries are exceptional. They belong to the category of obstinate and refractory abnormalities. They are usually caused by a punctured wound sustained by coming into violent contact with the shaft of vehicles, fences, etc. Other, though rarer, cases are caused from contusions of the inferior surface of the pectoral region by lying heavily upon the shoes or upon hard objects lying upon the stall floor or pasture lot. In this latter event the cutaneous and subcutaneous bruise causes an abscess that burrows between the muscular layers and eventually affects the soft bony and cartilaginous structures of the sternum. Often the suppurating process is accompanied by the formation of a large fibrous tumefaction of the muscles (muscular sclerosis), which becomes honeycombed with fistulous tracts. These are always located *inferiorly*, while those resulting from punctured wounds are located *anteriorly*. The anterior ones being the result of considerable violence, are sometimes complicated with more or less extensive fracture of the sternum or contusion of the cartilage. In some instances even the ribs and costal cartilages are implicated. As in the case of all refractory fistulæ (poll-evil, quittor, etc.), the morbid phenomena are perpetuated by necrotic sequestra, poor drainage and constant aggravation of the part by the subject's movements. *Treatment.*—The treatment is seldom satisfactory. In the *inferior* variety operative treatment gives better results than when the fistulous orifice points *anteriorly*. Here the knife, by keeping along the median line, may be freely used to expose the seat of the disease, without endangering the patient's life from excessive hæmorrhage, but in the anterior variety extensive surgical intervention is quite hazardous, owing to the great vascularity of the region. It is quite impossible to make an exploratory opening of any considerable dimensions without severing one of the large veins or arteries for which the region is noted. And even when the orifice is enlarged it offers but meagre admission

to the real seat of the disorder. That is to say, the necrotic centre is too remote to be easily reached with the purpose of removing the insulting matter, bone, cartilage, etc. Incisions located to give dependent drainage do not help matters, as here, too, the distance from the surface to the seat of the trouble is too great to admit of satisfactory surgical removal of all the spurious substance upon which a cure would depend. In inferior sternal fistulæ resolution may be hastened by first making a liberal incision, five to six inches long, along the median line, extending from the surface of the body to the sternum, and then cauterizing the whole wound with a large hot iron. The cauterization widens the wound and delays its closure as the necrotic matter sloughs away and finds its way out of the wound. The cauterization should be repeated weekly until the necrotic centre has taken on a healthy appearance. In the anterior sternal fistulæ the same treatment has never given any good results. The best results are attained by preventing them, when the punctured wound is sustained. The deep punctures of the breast should be promptly disinfected, to the remotest recess if possible. Irrigation with a potent antiseptic liquid for no less than two to three hours and then follow by protecting the opening against subsequent microbian invasion, will often promote the prompt healing of such wounds, without the discharge of pus. When once the fistula is well established the only practical treatment is to keep the external orifice open and to irrigate daily with mercuric chloride solution, taking care to wash out the wound instead of overfilling it with the liquid. To leave such channels filled with liquid only aggravates the condition. When the penetration is several feet deep the posterior end can sometimes be located just behind the elbow, at which point a drainage opening can be made to good advantage, but when the tract ends beneath the shoulder no such treatment is possible. The use of caustics is admissible. These should be applied in the dry form by inserting them into the orifice. They serve to keep the orifice from closing, and if inserted throughout the entire tract they transform the chronic inflammation into an acute process and thus hasten recovery.

Purpura Hæmorrhagica.—Will purpura hæmorrhagica become a surgical disease? Since the year 1860 the domain of surgery has been gradually broadening. Each year has seen new diseases added to the surgeon's list. Practically all the chronic afflictions of the bowels, kidneys, bladder, uterus, vagina and even the heart and lungs have passed to the surgeon's care,

and now comes the claim that an acute constitutional disease is promptly terminated by surgical intervention. A veterinarian of good repute and wide experience vouches for the statement that serious attacks of purpura hæmorrhagica are promptly terminated by *blood letting*. It is claimed that an otherwise hopeless case was recently cured by drawing some three gallons of blood from the jugular vein. The patient is described as having a high temperature, running down pulse, loss of appetite and enormous swellings on the head, abdomen and extremities and all of the signs of dissolution. After withdrawing the blood the temperature dropped, the pulse revived, the appetite returned, and resolution promptly supervened. The method is worth a trial.

Thrombosis of the Iliac Arteries.—Thrombosis of the aorta, at its quadrification, extending downward into one or more of the iliacs, deserves more frequent mention among the diseases of horses. The disease occurs most frequently among race horses and fast harness horses at about the time of their maturity and after several years of speeding during their years of growth. The disease is manifested by the sudden appearance of an acute, painful lameness in one or both hind-legs during fast exercise. In some cases a furlong of fast work will provoke an attack, while in others the lameness may not appear until after a mile or more of violent exertion. In symptoms the attack simulates azoturia, with the exception that the pain is very transient. The subject suffers frightful agony, but only for a few minutes. Five to twenty minutes is the usual duration of the pain. The diagnosis is confirmed by a rectal exploration, which reveals an enlargement of the aorta and partial or even complete stenosis of one or more of the iliac arteries. The disease is incurable and has a well marked tendency to become more serious as an animal grows older. Affected subjects may, however, prove useful for slower work for several years.

GLANDERS IN THE WILD WEST SHOW. — Reports from Cody, Wyo., the home of Buffalo Bill, received here to-day, are to the effect that the Wild West Show has been quarantined in France and that all of the 250 show horses, some valued as high as $2,000, have been shot, owing to glanders having broken out. It is also declared that the show has not been successful this year and that Colonel Cody is offering all of his ranch and cattle interests in this country for sale. These reports have not been confirmed.—(*New York Journal, Sept. 20.*)

EXTRACTS FROM EXCHANGES

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D, V. M.

PECULIAR DEATH OF A DOG [*Lieut. Tylny Haigh, A. V. D.*].—The following case was related to the author by a medical friend, owner of the animal. The dog, bull mastiff, 18 months old, weighing about 80 lbs., has been in the owner's possession ever since his puppyhood; was exceedingly good tempered, playing about with the children; has never been sick. He has never been allowed off the premises unattended, and when exercised was naturally somewhat excited and in high spirits. Finding such a big dog a nuisance, the owner sold him and took him from his residence to bring him to his new master. On his way to the railway station, the dog behaved in his usual manner and got quite quietly into an empty first-class carriage with his master. As soon as the train started he grew wildly excited, champing his jaws, foaming at the mouth, snapping in the air and jumping at the windows and refusing to be quieted. As he got perfectly furious, so much so that the owner became alarmed, he pulled the alarm communication and got out of the compartment as soon as the train stopped, and shut up the dog by himself; on the remainder of the journey the animal could be heard knocking himself violently for about twenty minutes and on the arrival of the train he was found dead on the floor, with his tongue hanging out of the mouth, black in color and nearly bitten off. No post-mortem was made.—(*Veterinary News.*)

EXTRAORDINARY PASSAGE OF TAPE THROUGH A CAT'S INTESTINE [*T. G. Heathy, M. R. C. V. S.*].—This was a blue Persian cat, aged two years, which had spent the first year of his life in a hospital. It never looked in good condition and on that account had been sent to the country to recuperate. It did him good and his health was much improved. Four days before his death, he seemed dull and out of sorts, preferring to lay in a dark place and refusing all foods, lapping only a few drops of water. At intervals he would make efforts to vomit, but only succeeded in throwing up a little greenish fluid. He had two doses of castor oil without result. Towards the end of his life he had considerable flow of saliva from the mouth. Examination

per rectum revealed nothing. He finally was found dead one morning. At the post-mortem the bowels were found slightly congested and presenting a curious puckered appearance. On opening the stomach three inches of ordinary sewing tape were found projecting into the stomach through the pyloric orifice and on drawing it up it was found that it was continued down the intestine in its whole length to within five inches of the anus. It is remarkable that it should have worked its way so continuously and so far down the intestinal canal.—(*Veter. Journal, May, 1905.*)

MESENTERIC ABSCESS DUE TO STREPTOCOCCIC INFECTION [*Capt. W. A. Pallin, A. V. D.*].—This mare had exhibited general symptoms of debility following a severe attack of catarrhal fever. Although placed under proper treatment and hygiene, she did not seem to improve, and after a month she was still in very poor condition, continually lying down, showing occasionally symptoms of internal and slightly intermittent pain. In the presence of such a state of affairs and suspecting the formation of a mesenteric abscess, unfavorable prognosis was made and subsequently the animal was destroyed. At the post-mortem, besides the lesions of chronic anæmia, there was found in the abdomen a large fibrous tumor-like growth, which was enveloped in the mesentery and firmly adherent to several folds of the large and small intestines. It was situated principally in the region of the diaphragmatic flexure and was with difficulty separated from the surrounding tissues. The growth when cut into was found to consist of dense fibrous tissue, permeated and intersected in all directions by sinuses containing large quantities of creamy kind of pus, containing large number of streptococci with various other pus organisms. The whole growth weighed 18¼ lbs., was more or less oblong in shape and measured 12×6×6 inches. There were several openings on the mucous membrane of the small and large intestines, communicating with the sinuses of the growth. The remaining organs were all healthy.—(*Vet. Journal, May, 1905.*)

FRACTURE OF LUMBAR VERTEBRÆ [*Capt. W. A. Pallin, A. V. D.*].—A chestnut mare, five years old, ridden over a narrow bank, met with an accident, turned a complete somersault and laid on her croup in the ditch at the far side. On rising she is found with her back arched and a swelling across the loins extending back over the croup, indicating considerable effusion. She is very stiff in moving, but this passes off after walking a few yards and finally she is led back to her stable, some

three miles off, where on arriving she is placed in a loose box and hot fomentations and liniment applied on her loins. For two days she seems to be doing well; on the third she is found down, with complete paralysis of the hindquarters. She is destroyed. The post-mortem revealed a comminuted fracture of the 5th and 6th lumbar vertebræ with displacement; laceration of the spinal cord and extravasation of blood in the spinal canal of the lumbar and sacral regions with also extravasation into the muscles and tissues of the part, with again rupture of the ligaments between the two last lumbar vertebræ. In the second sacral vertebræ there was fracture of the base of the spinous process.—(*Vet. Journal, May, 1905.*)

LUXATION OF VERTEBRÆ FOLLOWED BY FORMATION OF A CYST IN THE SPINAL CORD [*G. B. Mower White, F. R. C. V. S., and F. Hobday, F. R. C. V. S.*].—The case illustrates the length of time an animal with such lesion can live, providing he is well looked after. An Aberdeen terrier jumped out of a carriage moving at the rate of ten miles an hour. He fell heavily and became paralyzed on the hindquarters. There was retention of urine for forty-eight hours and loss of sensation for three or four months. The treatment consisted in fomentations, sedative lotions, and in about a fortnight power of the sphincters returned, but the hindquarters remained paralyzed. Long treatment with strychnia, arsenic, iodide of potassium, massage, etc., was followed by little improvement, the best results obtained being that the dog was able to stand only a few seconds or perhaps walk a few steps. After 18 months of attention the animal had finally to be destroyed. The following are the results of the post-mortem examination: "There was a displacement between the 9th and 10th thoracic vertebræ without any fracture. The spinal canal was not appreciably narrowed. On the outer and ventral surface of the dura mater, at the level of the injury, there was considerable fibrous adhesion between the dura and the bone. The spinal cord was markedly narrowed at the end of the 10th thoracic segment, and on section but little normal cord substance could be seen. At the level of the 9th thoracic vertebræ there was an elongated cyst, measuring one inch in length and one-quarter of inch in its maximum diameter. It contained clear fluid. The cord above this level appeared normal to the naked eye, below it there was probably some slight shrinking of the cord substance."—(*Vet. Journal, May, 1905.*)

A MUSCULAR ANOMALY IN THE HORSE [*Peter Haugh*].—This was observed at the dissection of a horse in the Royal

Veterinary College: "On reflecting the cervical portion of the trapezius so as to expose the second layer of muscles in the scapular region, a narrow muscular strip was disclosed. It had an origin by means of a broad aponeurosis from the fascia lying over the scapular attachment of the cervical rhomboid. This aponeurosis gave place to a narrow rounded tendon lying upon the supraspinatus muscle and running in a ventral direction. On about the level of the trapezius tubercle, the fleshy portion of the muscle began, at first narrow, but gradually broadening, it crossed, in an almost vertical direction, ventralwards to the region of insertion of the deltoid muscle, in connection with which it ended in a flattened tendon."—(*Vet. Journ., June, 1905.*)

FOREIGN BODIES—ŒSOPHAGOTOMY IN A TERRIER PUPPY [*S. M. Woodward, M. R.C. V. S*].—A fox terrier, nine weeks old, had a large swelling on the œsophagus in the lower third of the cervical region. Under chloroform and after disinfection of the region, œsophagotomy was performed and a small chop bone removed. Sutures, dressings with solution of perchloride of mercury (1 in 5000), milk diet for three days and complete recovery in ten days. . . . . ANOTHER [*M. R. C. V. S*].—A pug, four months old, refuses his food, stands with his back arched, has no pain. When he eats something, he vomits it. Later he passes clotted blood and rejects some per mouth. He dies. Post-mortem: A piece of bone has stuck in the œsophagus within the chest. It had evidently been there for some time and had made a pocket for itself.

FISH-HOOK IN THE RECTUM OF A CAT [*Sampson Bennett, M. R. C. V. S.*].—A cat has hanging from underneath the tail a piece of fishing gut about two inches long. It is painful to the cat when it is pulled on. The animal is chloroformed, and the cord is pulled again, a hard body is felt, which cannot be brought out. A small pair of pliers is then used, the metallic body is snipped and two pieces of a fish-hook are successively removed. (*Vet. Journal, June, 1905.*)

AN INTERESTING CASE OF HERMAPHRODITE [*Prof. James Craig and Fred. Hobday*].—A black pug when three months old was noticed having protruding from the vulva a small pinkish body. The animal looked to all appearances to be a female; it had well-defined mammæ, a vulva, a vagina. The projecting body had a bony centre and to the finger felt like a dog's penis. When the animal was six months, this body had grown, and although it had no urethra, it showed a distinct glans penis; it was a tolerably well-formed penis. The animal mic-

turated through an opening in the floor of the vagina. Under anæsthesia the abnormal organ was amputated. Three weeks later the dog died by a sequel to distemper. At the post-mortem the following were detected: Behind each kidney there was a small, oval body; from the left one a small cord was running backwards and was continuous with an organ resembling the uterus of a young bitch. In this cord there is a corrugation like a coiled up tube. This left body is like a testicle and the cord the epididymis. The right body does not look so much like a testicle as the left, and the epididymis is not so well marked. The microscopic structure of these two bodies is that of a very young testicle. The uterus is typical as is found in a young bitch. It has two cornuæ and a body. The vagina and vulva forming the genital passage are normal. The testicles, uterus and vagina are fixed within the abdomen by folds of the peritoneum resembling the broad ligament. No prostate gland could be found. In this case the essential organs were male as far as the naked eye could judge, but that the other portions of the genital apparatus were female, the clitoris having reached an abnormally large size.—(*Vet. Journal, June, 1905.*)

TRAUMATIC PROLAPSED RECTUM IN THE HORSE [*R.A. Stock, F. R. C. V. S.*]—*Case 1.*—Grey mare is in labor. Something protrudes a short distance from the rectum; it is the off hind foot of a colt which has forced through the roof of the vagina and floor of the rectum. It is a breech presentation. With difficulty the mare is finally delivered of a fine colt foal alive. The wound of the rectum and vagina is closed with interrupted sutures. The next day, there is extensive prolapsus of the rectum. Hot fomentations, scarifying, washing out the rectum, astringent lotions. On the 3d and 4th days the swelling is enormous. On the 5th and 6th days the symptoms subside, on the 7th the rectum has resumed its position. . . . . *Case 2.*—Fine, three-year-old filly, turned out into a meadow with cattle, is found in pain and straining. Blood oozes from the anus. The next day she had prolapsus. Two practitioners have one after the other failed in reducing it. The author is called and finds a wound through the rectum besides the protruding gangrenous mass. It is decided to amputate the whole mass. It is divided into four parts, and one part at a time removed with the ecraseur. Hæmorrhage was abundant. Opiates and chloral were given, also cannabis indica. The next day animal seems comfortable. Wound was cleaned; opium and lead wash injected. Recovery in ten days. . . . . *Case 3.*—Brown

colt, three years, muscular and full of life. With him there was great tenesmus and after one or two days the rectum was prolapsed. A practitioner is called, he reduces the organ and keeps it in place with two sutures of white leather. The animal continues to strain and the author is called. The colt is very uneasy and makes violent efforts to defecate. The sutures are removed and the prolapsus at once returns. Rectal examination reveals the organ empty, but with oats sticking here and there in the mucous membrane, and also a rusty nail, which seemed embedded in the coat of the intestine. Being far away from home, the author improvised an ox bladder and a piece of tubing, gave an injection with this and administered a pint and a half of warm ol. lini and chlorodyne. The wounds and protrusion were dusted with starch and zinc ointment. Two days later the prolapsus was smaller and recovery occurred soon after.—(*Vet. Journal, June, 1905.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

RUPTURE OF THE POSTERIOR AORTA IN A MULE [*M. Bonnet*].—This mule, which had rather become famous by his performance in the last Paris-Bordeaux race, is found one day out of sorts and the author is called to see him. The symptoms that the animal present are very serious; they all point to an internal hæmorrhage, and on account of the rapidity of their development, it is supposed that the lesion is located at the aorta. Evidently the animal is doomed, and indeed in a short time his agony begins and death follows. At the post-mortem, on removing the skin, all the tissues seem bloodless, and the superficial vessels are empty and no blood escapes even to tinge the cellular tissue. On removing the fore legs, the axillary trunks are empty. On opening the abdomen, an enormous flood of blood escapes. The contents of the abdomen float in a black mass of blood. The liver and kidneys are pale in color. The posterior aorta is very thin. Its walls are no thicker than those of the posterior vena cava; they are soft and depressed, and back of the renal arteries there is a slit, two centimetres long, through the coats of the artery, with borders concave and slightly ecchymosed. In the thorax there is nothing abnormal. The heart contains no blood. The auriculo-ventricular valves are

rather thick. There are numerous spots of endocarditis.—(*Journ. de Zoötechnie, March, 1905.*)

RESISTING POWER OF MULES TO PENETRATING WOUNDS OF THE ABDOMEN [*M. Aubry*].—While in horses these kind of injuries are generally considered as very serious, on the contrary in mules their termination is not, as the two following cases demonstrate: One, aged 30 years, thin, worn out and covered with sores, receives on the left side of the abdomen several blows with the horn of a steer. A large wound is the result, and through it an intestinal circumvolution projects, hanging with folds of the omentum in the blood and the dirt on the ground. The protruding mass is washed several times with pails of water, is returned into the abdomen, the torn parts of the omentum are removed, ligatures applied on the bleeding vessels and the whole is closed with four stitches, involving muscles and skin. Eighteen days after, the mule was to work. Another, younger, 7 years, is run into by a stage; the pole enters the abdomen of the animal, which is thrown. He has a large, anfractuous wound back of the last asternal cartilages. The skin and muscles are torn in pieces. In raising the superior flap of the skin, the large colon is exposed, protruding through the wound, but not otherwise injured. After thorough disinfection, the intestinal mass is kept in place by six stitches (quilled sutures). Fifty-eight stitches were used to close the muscular and cutaneous flaps. The recovery was comparatively rapid; but it took two months before the animal could resume work on account of the cicatricial lesions of the flank, which interfered with the action of the hind leg.—(*Rec. d'hyg. and de Med. Vet. Mil., and Rev. Gen., April, 1905.*)

MEASURES AGAINST TUBERCULOSIS [*Vallée and Villejean*].—At a meeting of the Commission against Tuberculosis, it was resolved to have the following post bill made as public as possible: "Animals of the bovine specie being frequently tuberculous and the milk of cows affected with that disease being able to transmit this disease to man and specially to children, *raw milk ought not to be used.* Long boiling will remove the danger. Milk which rises while on the fire, is not yet boiled. When it rises the skin over it must be cut and new boiling watched for. *Never drink nor give to children any milk except boiled.*" The Commission then expressed two wishes: (1) It is desirable that only pasteurized, boiled or sterilized milk shall be allowed to enter into general circulation, or raw milk coming from stables where all the cows have been found free from dis-

ease by tuberculin test, and will be submitted to sanitary inspection. (2) Considering that a knowledge of the methods of milk control are not yet systematically organized in France, it is desirable that a course of milk inspection be immediately inaugurated in the national veterinary schools.—(*Revue de la Tuberculose, 1905.*)

TUBERCULOUS ENDOCARDITIS IN A COW [*M. Bergeon*].—The interest in this case rests on positive and well-marked symtoms presented by the animal during life. The cow had been ailing for some time and was losing flesh. She had a large swelling on the posterior part of the trunk. The cough is hacking, dry and heavey. Respiration short and by jerks. Severe dyspnœa is brought about by the slightest exertion. The pulse is small, weak and irregular. Temperature 38.8 degrees C. Percussion reveals abnormal sensibility of the thorax and promotes coughing. It also reveals spots of dullness irregularly disseminated. Auscultation detects râles in various places; respiratory murmur is scarcely perceptible and is absent where dullness has been detected by percussion. Beatings of the heart are irregular, strong, with violent pericardial sound; a fact which is peculiar with the nature of the pulse. On auscultating the heart a diastolical bellows noise is heard, stronger behind and at the base of the heart. Tuberculin test gave a marked reaction. At the post-mortem extensive tuberculous lesions are exposed on the lungs, pleura and thoracic lymphatic glands. The pericardium is thickened and contains a certain quantity of liquid. Myocardium is thick also, specially on the left ventricle; at the aortic opening, on the sigmoid valves and on a few points of the aorta, milliary granulations are found in quite great numbers. In the abdomen the kidneys are principally diseased; the right weighs 2 kil. 300 grammes.—(*Revue Veterin., May, 1905.*)

DEATH BY RUPTURE OF A CARDIAC ANEURISM [*Mr. Graux*].—The horse "Edison" is left at liberty in a riding ring and made to jump over bars at various heights. At the last jump, which measures 1 metre 20, the animal executes it without any appearance of great effort and drops dead on reaching the ground. The most minute examination of the head, cranium and neck failed to reveal any lesion. The bones are perfect, there is no vertebral dislocation, no hæmorrhage in the encephalic mass. On opening the chest the heart appears largely hypertrophied, of absolutely globular form. The ventricular walls are thinned to such an extent that the right resembles a

large membranous pouch. The pulmonary artery is narrowed a little above the right auricle. The pulmonary vessels and the heart are surrounded by a clotted mass of blood, indicating the rupture of an aneurism involving the origin of the pulmonary artery and also of the heart itself.—(*Rec. d'hyg. and de Med. Vet. Milit., 1905.*)

LINGUAL ACTINOBACILLOSIS MISTAKEN BY ITS APPEARANCE FOR TUBERCULOSIS IN A STEER [*G. Petit*].—This was a specimen exhibited by the author, who had received it from sanitary inspectors. The animal from which it came had been affected with visceral tuberculosis and on that account the tongue supposed to be the seat of tubercular lesions. The organ was literally full of nodules of various sizes, absolutely with the aspect of those of tuberculosis with the peculiarity that none was calcified. The size of the organ was not increased and free from the characters of the "wooden tongue." The tubercles are very abundant under the mucous membrane, invading as far as the extremity of the free part of the organ. They exist also in the muscular tissue and are principally gathered along the lingual artery. The lymphatic vessels and the subglossal glands are hypertrophied. The superficial nodules are adherent to the mucous membrane, project slightly on the surface, where a typical yellow orange coloration is observed. Sometimes, however, there is a slight depression. Although these are not typical of tubercular lesions, the general aspect is such that without the examination under the microscope the diagnosis cannot be established. This, however, removes all doubt. The tufts characteristic of actinobacillosis are readily made out and found accumulated in the nodules.—(*Bullet. de la Soc. Cent., May 30, 1905.*)

TWO CURIOUS CASES OF DELIVERY [*Arthur Andri*].—The first is that of a mare for which the author was called, and where he found an animal in labor with the four feet presenting. Unable to return them he decided to perform embryotomy of the two fore legs—a difficult task as he did not have the proper instruments; still he succeeded in loosening the skin as far down as the elbow; he then applied the best he could all means of traction on these two legs, but not succeeding he has recourse to a rather severe method, in appearance at least, but which proved short and decisive. He fixed the cord attached to one leg on a solid spot and made the mare pull ahead; the first leg came out torn away. Repetition of the same method on the second leg and afterwards on the hind legs followed with the

same result. The next day the mare was apparently well. . . . The second case relates the accouchement in a sow. In the district where Mr. Andri practices, there are many hog-breeding establishments, and so as to avoid too many requests for his services as accoucheur, he has drilled in some of these establishments one or two of the most intelligent women he could find and dressed them to deliver sows. He selected for *accoucheuses* the women who had the smallest hands. Lately one of those *sage-femmes* was unable to call a sow from her fourth little one; she had delivered three alive, but this one was dead and in putrefaction. M. Andri opened the flank and through it was able to push the dead fœtus out of the uterus and deliver it. Three other living youngsters were then delivered alive. The wound was disinfected, closed, and the mother was saved.—(*Progrès Vétérinaire, May 25, 1905.*)

OBITUARY.

EDWIN ROSS OGDEN, D. V. S.,

a member of the Veterinary Medical Association of New Jersey, and one of the best known veterinarians in Northern New Jersey, died Thursday night, Sept. 21st, 1905, at his home in Orange, N. J., from an obscure stomach trouble. Dr. Ogden was born 51 years ago, and was the son of Mr. and Mrs. Elias R. Ogden. He was in business in Chicago, and about twenty years ago studied veterinary science and was graduated from the American Veterinary College, New York City. He removed to Orange in 1890. His wife, who was Miss Clara Morris, of Chicago, survives him.

THE NUMBER OF FEATHERS ON A HEN.—A company that manufactures poultry-feed has recently drawn no end of notice to itself by a guessing competition as to the number of feathers on a hen. Thousands of guesses were received. One competitor, evidently on the lookout for a catch somewhere, estimated "none at all." From this the guesses ran up into the hundreds of thousands, and even into the millions, the highest being 600,060,017. The correct number proved to be 8,120, and was announced by the company with a feeling of "pardonable pride in having contributed to poultry science an item of information actually new."

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The fifteenth annual meeting was called to order at 11 A. M. Tuesday, Sept. 12, by President George H. Berns, in the lecture room of the New York State Veterinary College, Ithaca, the room being fairly well filled, though it was raining. The roll-call was dispensed with and the attendance determined by a registry book—as follows:

THE ATTENDANCE.

G. S. Hopkins, Ithaca; Robert A. McAuslin, Brooklyn; Geo. H. Berns, Brooklyn; Mrs. Geo. H. Berns and Miss Nellie Berns, Brooklyn; Pierre A. Fish, Ithaca; James Law, Ithaca; Claude D. Morris, Binghamton; Raymond C. Reed, Elmira; Robert J. Foster, U. S. Army; H. L. Lawrence, Syracuse; A. W. Baker, Brasher Falls; T. D. Adlerman, M. D., New York City; Chas. H. Jewell, Vet. 13th Cavalry, Ft. Riley, Kansas; W. Huff, Rome; L. H. Howard, Boston, Mass.; J. M. Currie, Rome; Edward J. Nesbitt, Poughkeepsie; P. J. Axtell, Deposit; W. N. Babcock, Scott; W. L. Williams, Ithaca; S. H. Burnett, Ithaca; F. F. Fehr, E. Bloomfield; J. J. Lindner, Canandaigua; Louis Juliand, Greene; L. L. Zimmer, Auburn; Mrs. L. L. Zimmer, Auburn; Garry T. Stone, Binghamton; G. A. Knapp, Millbrook; George W. Meyer, New York City; Hermann Kock, Brooklyn; Ward Giltner, Ithaca; Frank Hunt, Jamestown; Fred D. Fordham, Watkins; Theodore B. Kellogg, Watkins; Howard J. Milks, Candor; Mulford C. Thompson, Newburgh; E. F. Bettinger, Chittenango; A. W. Baker, Oneonta; James T. Glennon, Newark, N. J.; Thomas E. Smith, Jersey City, N. J.; Roscoe R. Bell, Brooklyn; C. J. Spencer, Dundee; Mrs. C. J. Spencer, Dundee; J. W. Turner, Lyons; A. J. Tuxill, Auburn; Charles Cowie, Ogdensburg; John A. Bell, Watertown; F. H. Bishop, Rochester; Thomas G. Sherwood, New York City; G. C. Kesler, Holley; J. W. Corrigan, Batavia; H. S. Beebe, Albion; J. F. DeVine and wife, Goshen; Andrew English, Ithaca; D. P. Webster, Hilton; F. T. Gallagher; A. A. Fagundes; Carr. R. Webber, Rochester; P. I. Johnson, Williamson; A. George Tegg, Rochester; W. B. Smith, Ithaca; W. G. Hollingworth, Utica; A. H. Ide, Lowville; J. L. Ronan, Corning; Mrs. J. L. Ronan, Corning; E. B. Ackerman, Brooklyn;

Wm. Herbert Lowe, Paterson. Many failed to register.

The minutes of the last meeting were read by Acting Secretary Burnett, and were approved.

President Berns read his annual address, which consisted of a brief estimate of the condition of the profession in the Empire State. As a special theme, he dealt with the great prevalence of glanders in the large cities in the eastern section of the State, particularly in New York City. While there had been no alarming outbreaks in the large stables in the city, there was a steady spread of the disease among all classes of stables. Although a very large percentage of outbreaks are not reported to the health authorities through fear of exposure or quarantine, the statistics from the Health Board were quite alarming. Speaking more particularly for his own city (Brooklyn), he said that in the year 1904 more than 800 cases were on record, while in the first eight months of the present year there were more than 500. He believes that $300,000 would not cover the loss to the horse owners of Brooklyn for this year. He felt that the present system of inspection and supervision is inadequate, and recommended the establishment of a Live-Stock Sanitary Board with autocratic power to deal with and stamp out the disease.

Secretary Kelly had prepared a short report of the work of his office, which also embraces the treasurership, the latter section showing the financial condition of the society to be much better than at his last accounting.

The following applications for membership were favorably recommended by the Board of Censors, and they were unanimously elected:

Newell D. Backus, D. V. M., Geneva, N. Y.

H. S. Beebe, D. V. M., Albion, N. Y.

Mulford Conklin Thompson, D. V. M., Attlebury, N. Y.

Frank J. Baker, Brasher Falls, N. Y.

D. D. LeFevre, D. V. M., Addison, N. Y.

Alfred F. Bollinger, D. V. S., 24 Snyder Ave., Flatbush, N. Y.

Carr R. Webber, M. D. C., 156 Andrews St., Rochester, N. Y.

J. Schurmacker, V. S., 113 East 84th St., New York City.

P. J. Axtell, D. V. M., Deposit, N. Y.

William Sheppard, M. R. C. V. S., Neck Road, Sheepshead Bay, Brooklyn, N. Y.

A. H. Ide, Lowville, N. Y.

The Prosecuting Committee submitted a report showing its

work since the last meeting. Its work was confined largely to writing to alleged offenders, warning them that unless they desisted active prosecution would be begun. In most cases this was sufficient to cause the offenders to cease practicing. It appeared, however, that greater activity might have been exercised, though with the small funds little legal prosecution could have been indulged in.

At 12.30 o'clock the meeting adjourned for the afternoon clinics, which were carried on until about 5.30, the convention reassembling in the lecture room at 7.30 P. M. for the literary and business programme.

The Acting Secretary read a number of communications, and President Berns, recognizing Dr. Wm. Herbert Lowe, President of the American Veterinary Medical Association, in the room, extended him the courtesies of the floor and invited him to address the meeting, which he did in the following most interesting manner:

DR. WM. HERBERT LOWE'S ADDRESS.

"*Mr. President and Gentlemen:—*

"I have been attracted for a number of years to the meetings of the New York State Veterinary Medical Society, not only on account of the value of the literary part of the programmes, but on account of the excellency of the clinics. As one who has watched the growth of this organization from its inception to the present hour I desire to take this opportunity to compliment you on what you have accomplished in this State and the magnificent State society you now have. I am glad to be here to-day in my official capacity as President of the American Veterinary Medical Association and personally witness the demonstrations and operations, hear the papers and discussions and to be able to meet so many of my professional friends and associates.

"This is certainly an ideal place for the profession to meet, and one that offers many attractions to the visitor. The profession throughout America, as well as yourselves, are proud of what Cornell University is doing for higher veterinary education under the directorship of that eminent educator, Prof. James Law. This modern—I might say model—veterinary college, with its laboratories, experimental farm, hospital, etc., is a thing of beauty as well as a thing of utility, and shall undoubtedly in the years to come be a joy and satisfaction to all those who may seek veterinary education within her confines.

"But in appreciating this new up-to-date veterinary school,

with its fine equipment and appointments, we must not forget the old school and its good work—the New York College of Veterinary Surgeons, chartered in 1857, and the American Veterinary College, in 1875, now consolidated and constituting the Veterinary Department of New York University—the New York-American Veterinary College. The self-sacrificing work of the pioneers in the cause of veterinary education and the advance work of the profession will, however, be more fully appreciated and honored by generations to come.

"The high standard veterinary education has attained in the Empire State is something that every true veterinarian is proud of and undoubtedly will aid the American Veterinary Medical Association materially in dealing successfully with the educational problem in America. In veterinary education two names are pre-eminent—Liautard and Law—both of whom we delight to honor.

"It seems to me that we as a profession are not giving enough attention to applying our knowledge of veterinary science to agriculture and the live-stock interests of the State. Animal husbandry, breeding, maintenance, development, utilization of animals, the production of a sound and wholesome meat and milk supply, and veterinary sanitary control in general; giving the agriculturist and the live-stock breeder the benefit of veterinary science and art, thus adding to the public wealth while we are safeguarding the public health. Public sentiment ought to be educated along the lines indicated, with a view of obtaining the necessary legislation to accomplish the desired end. Each State, in my opinion, should establish a State Bureau of Animal Industry under veterinary direction.

"Referring briefly to the American Veterinary Medical Association, I would mention that the profession of the Empire State occupies a most noteworthy place in its history and in its activities—in its birthplace, its founders, and in its presidents. The organization of the United States Veterinary Medical Association, now the American Veterinary Medical Association, was effected at a meeting held at the Astor House, in the city of New York, in the year 1863. Fourteen of the charter members were residents of N. Y. State—more than from any other State in the Union; New Jersey followed with nine charter members, the charter members from these two States exceeding in number those of all other States and countries combined. The rest of the country furnished 16, making 39 charter members in all.

"New York State has also the distinction of furnishing more presidents of the A. V. M. A. than any other State, nine presidents having been elected from this State.

"Yet, strange to note, that, although her membership was 14 in 1863, it is only 54 in 1905. In other words, she has added only 40 new members in 42 years—an average of not one new member a year. Why, there ought to be more from New York City alone than there are enrolled from the entire Empire State.

"I find that a similar condition exists in a number of other States as regards representation in our national association. Therefore, I purpose as part of the work of my administration to use the influence of my office to get a larger representation from every American State, territory and province. I purpose to issue a call for 1,000 recruits to the American Veterinary Medical Association. This is not a large number to ask for when we take into consideration the large number of qualified veterinarians in America to-day. Every State and every county and province will be drawn upon. I am going to ask every one of our six hundred members to do a part of this great work. New York State furnished the largest number of men for the United States Veterinary Medical Association in 1863. Shall it be said that she furnished the largest number of men for the A. V. M. A. in 1905? Every worthy and qualified veterinarian who is eligible to membership is wanted and such members of the profession should desire to have a vital connection with the A. V. M. A. and receive the benefits of membership in the grand council of their profession.

"Every veterinarian should be a member of his State Association and of the American Veterinary Medical Association, and he should read the AMERICAN VETERINARY REVIEW. He cannot afford not to be in touch with the work of the best men of the age and he is certainly not in very close touch with what others are doing if he ostracizes himself from the rest of the profession.

"Gentlemen, I trust I have not intruded too much upon your time and good nature. I thank you."

PAPERS AND DISCUSSIONS.

At the conclusion of Dr. Lowe's address, the literary programme was begun by the reading of a paper by Dr. Claude D. Morris, on "Dr. von Behring's Bovovaccine as an Immunizing Virus," which is published elsewhere in this number of the

REVIEW. A number of inquiries were made of the essayist by members, to all of whom he replied that as yet he knew little about it, but had read his paper to inaugurate a series of experiments with it, promising that the Society should know the results when results were obtained.

"The Negri Bodies and the Diagnosis of Rabies," by Cassius Way, detailed the further experiments of Prof. Veranus A. Moore in his efforts to obtain a rapid method of diagnosing this disease, as usually the danger to bitten persons lies in the delay in determining the true nature of the trouble. By staining these structures it is claimed by the essayist that an almost positive diagnosis may be arrived at within twenty-four hours. The REVIEW hopes to secure this valuable paper, and publish it in an early number, as nothing so encouraging has been offered to the public for this purpose.

Dr. Raymond C. Reed, gave a verbal description of a remarkable case treated by him last winter. A horse running away came into violent contact with a gate or fence, fracturing his skull so that a small portion of brain substance came out through his nostrils. It resulted in complete paralysis of the muscles of deglutition, which persisted for about twenty-one days, nourishment being administered by means of enemas. He afterwards recovered to a point where he could do ordinary work. This case brought out a lengthy and very interesting discussion, which was participated in by Drs. Williams, Fish, Bell, Corrigan, and others, in the course of which the question of rectal nutrition was fully gone into, some claiming that very little if any absorption of nutrient substances occurs and if it does the absence of digestive juices prevents assimilation. Others thought that the empty intestine would attract the intestinal juices and possibly in this way the digestive enzimes could be brought in contact with the nutritive enema. One speaker told how he had used a stomach tube and pump to throw strained oatmeal well forward into the floating colon, in a horse suffering from tetanus with perfect trismus, and, that, although the animal could neither eat nor drink for nearly three weeks, it was not greatly emaciated and he was of the opinion that the patient received a great deal of nourishment, very much more than he could have gotten had the enema been delivered in the rectum. The theory as to the escape of brain substance was that the terrific concussion caused the cribriform plate of the ethmoid bone to open by bulging, into which fracture the brain substance protruded, and as the bony sides of the fracture returned to their

position they " bit off " the protruding substance, and closed the cranial cavity, the tissue being then ejected through the nasal chamber. Dr. Reed has promised to write this case up for the REVIEW, which we are sure will be much appreciated and will, we believe, prove a record for veterinary annals.

At about 10 o'clock the evening session adjourned to convene at 9 o'clock on Wednesday morning.

At 10 o'clock on the second day the meeting was called to order by President Berns, the room being much better filled than on the first day—new and well-known faces showing up all over the room. After a few business matters were disposed of the literary programme was promptly resumed.

" Empyema of the Facial Sinuses of the Horse," by Dr. W. L. Williams, was a most excellent and instructive paper, being illustrated profusely by dry and wet specimens, which were passed around the room, enabling the essayist to punctuate every statement with an example of the same. Dr. E. B. Ackerman personally thanked the essayist, saying that he had at that time a case under treatment which greatly perplexed him, and he felt that he could now undertake further treatment with a better understanding of the trouble. Several others spoke, mostly, however, in the way of inquiry, and all feeling that they had enjoyed a great treat from one who has bestowed upon the subject very careful and intelligent study. The REVIEW is to have this paper as soon as some illustrative drawings can be made.

" Hydro-thorax—a Case Report," by Dr. Roscoe R. Bell, was next read and will be found in the regular department in this number. Numerous gentlemen related their experiences and treatment of this alarming condition, many telling of spontaneous absorption, others attributing recoveries to various drugs, but all agreeing that the vast majority of such cases die. Those discussing this case were Drs. L. H. Howard, of Boston ; Nesbitt, Berns, and Ackerman.

" Arecoline Hydrobromate," by Dr. Howard J. Milks, was a description of this drug and a review of the literature upon it, together with a number of experiments conducted last winter upon dogs and cats.

In the case report " Urethral Calculi," Dr. P. A. Fish had intended to detail the treatment of a Dalmatian dog, which he had operated upon twice recently to remove these bodies from the urethra just at the base of the os penis, the dog having been reported in excellent condition the day before the paper was to

be read. Unluckily, however, the owner 'phoned the doctor that the patient was again in trouble, and so instead of a case report the patient himself was brought before the audience and placed upon an operating table, having first received one grain of morphine. Ether was administered as an anæsthetic, and a fistulous tract through which urine was escaping (there being considerable orchitis and swelling of the sheath) was opened up and a catheter passed into the bladder, afterwards a catheter was sent through the entire length of the urethal canal, though before the incision it met an obstruction at the seat of the former operations, which was then thought to be a third calculus. None being found upon exploration, it was concluded that a stricture and a fistulous opening existed. It will be interesting to know the fate of Dr. Fish's patient.

"Clinical Examination of the Blood of the Cow," by Drs. M. C. Thompson and D. W. Dimock, was read by the former, and contained the result of much careful work, and will be valuable in establishing the normal blood of the bovine. It is likely, however, that the paper is more appropriate for publication than for presentation before a body of veterinarians, most of them hungry for practical subjects from men of large experience.

"The Dental Formula of the Horse" was a short but valuable contribution from Prof. Grant S. Hopkins, who exhibited many specimens showing variations in the numbers of teeth. There followed quite a lengthy discussion upon dentition and the significance of the so-called wolf-tooth, those taking part being Drs. Williams, Nesbitt, Reed, Corrigan, and others.

"Clinical Examination of the Blood in Veterinary Practice," by Dr. S. H. Burnett, was a chapter in the investigations which he has been conducting for several years, the details of which have been published in these pages. Here the author wished to show how the facts which have been brought out by these investigations can be utilized by the veterinarian in diagnosing, prognosing and treating diseases, just as urine-analysis can be made to serve such ends.

Dr. R. C. Reed gave another verbal case report, this time "Myxedema in a Dog," which brought forth the interesting fact that when regularly treated with thyroid extract the swellings get smaller, the weight reduces, the patient brightens and gives every evidence of great benefit.

Prof. Simon H. Gage gave an illustrated lecture on the evening of the second day entitled "Glycogen in the Muscle of the Horse," which was a very scientific discourse, the speaker show-

ing how the microscope could be utilized to detect the difference between horse meat and other meats through the presence of glycogen.

Many papers on the programme were not read, most of the authors not being present. It would seem that any gentleman who volunteers to present a paper before such a body, announces that fact upon the regular programme, and fails to be present, owes either an apology or a reasonable explanation of his failure to do so to the members.

ELECTION OF OFFICERS.

At the conclusion of the reading of papers the election occurred, and two candidates were placed in nomination for President, Drs. W. L. Baker and W. L. Williams. It was contended that Dr. Williams had through his great work in the clinics of this Society brought it to a condition where it stood among the best State Associations in this country, and he was justly entitled to receive the honor of election to the Presidency. The membership took this view of it, and upon motion of Dr. Baker he was unanimously elected. The officers for the ensuing year are as follows:

President—W. L. Williams, of Ithaca.

Vice-President—E. B. Ackerman, of Brooklyn.

Secretary-Treasurer—Garry T. Stone, of Binghamton.

Censors—Charles Cowie, G. S. Hopkins, J. W. Corrigan, A. George Tegg, and E. J. Nesbitt.

Upon motion of Dr. Bell, the By-Laws were suspended and two visiting veterinarians were elected to honorary membership. These were Dr. Wm. Herbert Lowe, President of the A. V. M. A., and Dr. Lester H. Howard, former President of the Massachusetts Veterinary Association, both of whom expressed their appreciation of the honor bestowed upon them.

Resolutions were unanimously passed heartily endorsing the Army Bill prepared by the veterinarians of the Army, and they carried with them instructions to the President to appoint a committee to use its good offices in behalf of the Bill in the way the committee may think best. President Williams has announced this committee as follows: Claude D. Morris, Chairman; James Law, and Roscoe R. Bell.

Condolence resolutions on the death of Dr. James McKee, of Staten Island, were passed, and thanks were extended to the essayists, clinicians, officers, and all who contributed to the success of the meeting.

NOTES OF THE N. Y. S. V. M. S. MEETING.

Members from all over the State reported practice better than it had ever been.

During the meeting the State Board of Veterinary Medical Examiners held a session and transacted routine business.

The clinical programme was carried out almost to the letter. Only one announced subject failed to materialize and in its place two others were substituted.

New Jersey sent three of her loyal sons to Ithaca—Drs. Wm. Herbert Lowe, of Paterson; Thomas E. Smith, of Jersey City; and James T. Glennon, of Newark.

Dr. Lester H. Howard, of Boston, Mass., was an interested spectator at every session of the literary and clinical programme, and expressed himself as more than repaid for his attendance upon the meeting.

Papers by practitioners were conspicuous by their absence. Theses by recent graduates may be full of interest and value, but hardly what is looked for at an annual meeting of the Empire State Society.

Case reports, minutely and truthfully told, including post-mortem findings (should the case terminate fatally), are of as much if not more value than abstract theories, even though couched in the most elegant medical terms.

The entertainment on Wednesday evening was enjoyed by all—the stereopticon lecture by Prof. Gage, the pathological and bacteriological exhibits, the anatomical and surgical specimens—were examined and well profited by.

Dr. W. G. Hollingworth, of Utica, gave a dinner at the Clinton House on Wednesday evening to a number of the Alumni of the New York-American, those present being Drs. L. H. Howard, E. B. Ackerman, Wm. Herbert Lowe, Thomas E. Smith, James T. Glennon, Roscoe R. Bell and the host.

President Berns drew a sad picture of the gradually increasing prevalence of glanders in the eastern portion of the State. It is more than likely that a generous appropriation by the Legislature to compensate owners for glanderous horses destroyed would do a great deal to eradicate the disease, if seconded by thorough disinfection and early diagnosis with malleine. When such an appropriation was available a few years ago, all suspects were promptly reported, while under the present system they are zealously concealed, certainly so long that great mischief is done.

The tally-ho trip to Enfield Falls; the picnic in the Glen;

the scramble over rocky cliffs, with maddening whirlpools so deep down in the cañons that a human looked like a microörganism; the moonlight homeward ride over mountain fastnesses and through deep valleys, followed by the rush for sleeping berths on the Road of Anthracite, are incidents of the last afternoon spent in the picturesque city by Cayuga Lake. With Dr. Williams and his charming wife as hosts, nothing was lacking to make the event an oasis in the desert-life of the denizens of the great hot cities of the East.

The REVIEW has arranged with Dr. Williams to again report the clinic in that full and satisfactory manner pursued for the past few years, giving details of the surgical procedures, and the results of the operations, the latter consideration constituting the value of the report. We will here simply enumerate the cases presented at the various sessions: Castration of cryptorchid colt; poll-evil operation; defective molar and empyema of maxillary sinuses; castration of colt (standing); milk fistula (cow); rupture of the extensor pedis tendons in new born foal; exhibition of recovered case to show absence of extensor pedis muscle, and peculiarities of action due thereto; exhibition of museum specimens from fatal cases; empyema of facial sinuses (second case); "ear fistula," or "ear tooth"; involuntary shaking of the head; ante- and post-mortem on tubercular cow; urethral calculi in dog.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The twenty-second semi-annual meeting was held at the Hotel Oneonta, Harvey's Lake, on September 19, 1905, and was called to order at 10.30 A. M., by Ex-President Otto G. Noack. Reading of the minutes of the annual meeting was dispensed with. The Chair appointed Drs. Jacob Helmer, J. W. Sallade, and J. H. Timberman as temporary members of the Board of Trustees.

The following members of the Association were present: Drs. N. H. Allis, Louis Connolly, H. R. Church, G. B. Duboise, D. B. Fitzpatrick, S. J. J. Harger, Jacob Helmer, Edwin Hogg, W. Horace Hoskins, J. B. Irons, L. E. Meade, C. J. Marshall, J. C. McNeil, J. C. Newhart, Otto Noack, R. G. Rice, W. H. Ridge, J. W. Sallade, J. H. Timberman, and I. W. Zellers.

The following visitors were present: Mrs. N. H. Allis, Mrs. Jacob Helmer, Mrs. W. H. Hoskins, Mrs. C. J. Marshall, Mrs.

J. C. Newhart, Mrs. W. H. Ridge, Mrs. J. H. Timberman, Mrs. I. W. Zeller, Miss Hogg, Mr. and Mrs. Jacob Moyer, Dr. and Mrs. W. B. Collom, Drs. F. A. Wiltrant, A. C. Foos, J. R. Sitterly, H. Lutholt, D. S. Church, S. F. Hewitt, J. F. McNeal, Geo. W. Dunlap, H. S. Stoker, and Wilson S. Decker.

The following were regularly elected to membership: Drs. G. W. Dunlap, Wilson S. Decker, Charles S. Gelbert, V. M. D., H. W. Witmer, V. S., Louis A. Mansbach, A. J. Mitchell, V. S., F. A. Wiltrant, A. C. Foos, J. R. Sitterly, V. S., H. Lutholt, M. D. C., D. S. Church, V. S., James M. Sloan, and W. B. Collom.

The application of B. F. Sutton was ordered to be held over till the March meeting.

The following recommendations were made by the Board of Trustees and regularly adopted by the Association:

Drs. Frank B. Bachman and George Duboise were reinstated to membership. - - - - H. D. Hackler and J. T. Kean are to be reinstated upon payment of back dues. - - - - The dues of M. B. Critchfield, L. O. Lusson, and S. E. Webber were remitted and the Secretary instructed to write a letter of condolence to Dr. Lusson expressing the sympathy of our Association for his total loss of sight. - - - - The dues of Dr. W. S. Kooker were remitted and his name ordered to be placed in the list of honorary members. Several of the members spoke of the valuable service rendered this Association and the profession at large in former years, by Dr. Kooker. His application for honorary membership was as follows: We, the undersigned members of the Pennsylvania State Veterinary Medical Association, in recognition of the valued services of Dr. W. S. Kooker, of Philadelphia, recommend his election to honorary membership. (Signed) W. Horace Hoskins, J. W. Sallade, W. H. Ridge, J. H. Timberman, Jacob Helmer. We recommend the suspension of the by-laws in order that Dr. Kooker may be made an honorary member at this meeting, in view of the condition of his health, and that we extend to him and his family our sympathy in their present affliction.

Delegates to veterinary medical associations were called. Hoskins, Noack, and Marshall reported for the A. V. M. A. It was the general opinion of these delegates that this was the best meeting of the Association ever held. Our association has justly criticized and even opposed the subject of clinics as they have been conducted at certain times. The clinic at Cleveland was considered a success in every sense of the word and it is hoped

that clinics of this character may continue to be an important feature of these meetings.

Drs. Hoskins, Noack and Marshall also reported as delegates to the New Jersey State Veterinary Medical Association, which was held at Washington Park in July.

The members appointed as delegates to the New York State Veterinary Medical Association, held in Ithaca, in the past week, failed to attend this important meeting. One of our members (Dr. R. G. Rice, of Towanda), attended the meeting at Ithaca and reported that our New York neighbors had a very good meeting.

Dr. W. H. Ridge reported that the Keystone Veterinary Medical Association was doing the best work that it has ever done.

Much regret was expressed by different members for the fact that so little interest is taken by our delegates in visiting the valuable meetings held by adjoining States. The Secretary was instructed to make a more vigorous effort in the future in selecting delegates and urge them to attend these meetings. Some of the members considered this question so important that it was suggested that our association should pay traveling expenses, of at least one delegate, to these meetings. This question was referred to the Board of Trustees to be considered and their decision reported at the next meeting.

Several members urged the importance of identifying ourselves more closely with the work of medical associations. The Secretary was instructed to request the Pennsylvania Medical Association to send a delegate to our next annual meeting.

It was recommended that our publication committee take up the subject of publishing the minutes of our meetings in pamphlet form and report at our annual meeting whether such a plan would be feasible and the estimated expense.

A motion was made by W. H. Ridge, and regularly adopted, that we continue to employ a stenographer to report our annual meeting.

The meeting was adjourned at one o'clock for dinner, after which a boat ride was taken on the lake. The members and visitors to the number of 42 participated in these pleasures, which were so thoughtfully and carefully arranged for us as a treat by the members in the Wyoming Valley.

After the boat ride the gentlemen returned to the meeting hall and resumed work, while the ladies spent the balance of the afternoon on the launch and visited points of interest around the lake.

President McNeil, with several other members, was prevented from attending the forenoon session by a wreck on the railroad. The President was on hand for the afternoon session and surprised the members by delivering a carefully prepared address. He was cheered to the echo for this, his maiden effort, and all are in hopes that he may continue to grow in the field of literature and oratory. The balance of the session was devoted to the reading of papers. The programme was as follows: "Minor Operations," S. J. J. Harger, "Importance of Surgical Operations," John W. Adams, "The Work of the State Board," Jacob Helmer, "The Tuberculin Test," W. H. Ridge, "The Veterinarian and Quackism," Otto G. Noack, "Abnormal Colors in Milk," S. H. Gilliland. All responded with carefully prepared papers except John W. Adams and S. H. Gilliland.

The meeting adjourned at 6 P. M. A pleasant ride was taken from the lake to Hotel Sterling in Wilkes-Barre, where a much desired supper was enjoyed by all.

The pleasures of this meeting were concluded by a visit in the evening to one of the coal mines. This mine is about 1,100 ft. under ground. We were shown through one of the company's stables where about 60 mules were kept. We were also shown an emergency hospital. We returned safely to the top of the earth a dirty and wiser crowd. It was conceded by all that our present meeting was the best semi-annual meeting ever held by our Association.

C. J. MARSHALL,
Secretary pro tem.

SCHUYLKILL VALLEY VETERINARY ASSOCIATION.

This Association held its twelfth annual meeting at the Board of Trade Rooms, Reading, Pa., June 21, 1905. The meeting was called to order by the President *pro tem.*, Dr. Noack, at 1 P. M. The President, Dr. E. D. Longacre, being unavoidably absent, Dr. Wehr made a motion, seconded by Dr. Bieber, that Dr. Noack be appointed President *pro tem.*, who then presided.

The minutes of the previous session were read and approved as correct. Dr. Noack gave a few remarks complimentary to the Association.

Members present were Drs. Wehr, Noack, Huyett, Burkholder, Bieber and Kohler. Among our visitors was Dr. Leonard Pearson, State Veterinarian.

Collection of dues was now in order. All members present

cheerfully responded, and are in good standing. The Secretary read a number of communications of correspondence. Bills to the amount of seven dollars were paid by order.

Dr. Noack reported as the delegate to the Pennsylvania Veterinary Medical Association and also to the Keystone Veterinary Medical Association.

The collection of dues amounted to $12, leaving a balance after bills had been paid of $29.45 in the treasury.

The various committees reported progress.

Election of officers for the ensuing session resulted as follows:

President—Dr. Wehr.
Vice-President—Dr. Kohler.
Treasurer—Dr. Bieber.
Recording Secretary—Dr. W. S. Longacre.
Corresponding Secretary—Dr. Huyett.
Trustees—Drs. Noack, McCarthy, and E. D. Longacre.

Dr. Kohler read a valuable paper upon purpura hæmorrhagica as follows:

"Purpura hæmorrhagica is an eruptive, non-contagious fever, occurring as a sequel to some previous disease of a debilitating nature, such as influenza, strangles, etc. It is a disease of a septic nature, principally of the blood, affecting the capillary bloodvessels; or it may be due to the fact that the blood is in a more watery condition, as there is so much extravasation of blood serum; this takes place especially on the mucous membranes.

"As a rule when this disease makes its appearance it follows some debilitating disease. Filthy, ill-ventilated stables, impure air, etc., may prove to be exciting causes.

"Swelling of one or more of the legs is usually the first noticed symptom. On exercise the swelling disappears, but as soon as the animal rests the swelling comes on again. This swelling is often very characteristic, appearing as if a cord was tied around the limb in such a manner as to interfere with the circulation. All the visible mucous membranes are covered with patches, purple and red in color, of various sizes, often so large that the tissues commence to slough. These conditions are sometimes mistaken for glanders. The pulse varies in character; in some cases it is much quicker than in others; the temperature is usually from 103 to 106°; there is in some cases swelling of the eyelids and nose, even the swelling sometimes becomes so severe that there is danger of suffocation.

"The udder or sheath swell sometimes so severely that they slough.

"The prognosis should be guarded, as some cases, while getting along very satisfactorily, and all of a sudden there will be a relapse, and the patient dies in a very short time. The symptoms of recovery are gradual improvement of appetite, the pulse becoming more regular, the swelling of the legs decreasing and recovery takes place in five to ten weeks.

"Place the patient in the best quarters obtainable, free from unhealthy odors or dampness, plenty of dry bedding and all the pure air possible, as there is a deficiency of coagulable constituents in the blood; therefore potassium chlorate is recommended; tincture of iron, oil of turpentine, bichromate of potash, etc., are recommended. In cases of a weak heart, give cardiac and diffusible stimulants; if swelling is severe around the nostrils apply strong vinegar or plumbi acetatis solution, and sometimes it is necessary to perform tracheotomy. Sometimes a laxative is very beneficial. Give easy digestible food, such as steamed oats, bran, or grass if obtainable."

The treatment was thoroughly discussed by some members and Dr. Pearson. It was definitely decided that the best results are obtained by the use of colloid of silver, given intravenously, with astringent washes locally. In serious cases, with much swelling, lance freely; the remaining treatment being symptomatic. Dr. Noack reported a case of purpura following a hæmorrhage of the nostrils, the patient having three or four hæmorrhages previous to being afflicted with purpura.

The essayists, Drs. Potteiger and Schneider, being absent, Dr. Wehr responded with reports of numerous cases of tetanus he had been treating with the antitoxin. He considers the antitoxin the best agent he has yet found, reducing the fatality better than with any other line of treatment. Dr. Wehr reports good results in five out of seven cases he had been treating; but using heroic doses in starting, gradually reducing dose. The subject was well handled.

Dr. Noack read a paper on "Needed Legislation to Control Rabies." It was interesting throughout, and has plainly shown that our laws to that effect are lax, and measures should be taken immediately to amend same, or rather have laws enacted as some neighboring States have done. Dr. Pearson, in discussing the question, remarked that in England by muzzling the dogs and preventing them from running at large that not a case of rabies had been reported for the last three years.

The Secretary now read the veterinary bills which had passed the last legislature.

Dr. Kohler related a number of outbreaks of hog cholera and swine plague, and insisted that we ought to have more stringent laws in regard to transportation of hogs to prevent the spread of this contagious disease.

Dr. Pearson said that there was a valuable experiment being conducted at Washington at present, by professional men, on a serum for the treatment of hog cholera and swine plague.

Dr. Wehr made a motion to adjourn, seconded by Dr. Bieber.

W. G. HUVETT,
Secretary.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President Lowe announces his committees as follows:

COMMITTEES 1905-1906.

Executive.—M. E. Knowles, Chairman, Helena, Montana; James Law, W. H. Hoskins, George W. Dunphy, Roscoe R. Bell, A. H. Baker. *Ex-officio:* William Herbert Lowe, J. G. Rutherford, W. H. Dalrymple, E. H. Shepard, Chas. E. Cotton, Richard P. Lyman, John. J. Repp, Geo. R. White.

Finance.—R. C. Moore, Chairman, Kansas City, Mo.; J. E. Ryder, John W. Adams.

Publication.—Richard P. Lyman, Chairman, Hartford, Conn.; A. M. Farrington, E. M. Ranck, T. E. Smith, J. J. Repp.

Intelligence and Education.—C. J. Marshall, Chairman, Philadelphia, Pa.; W. L. Williams, Geo. R. White, Leonard Pearson, A. T. Peters.

Diseases.—Chas. H. Higgins, Chairman, Ottawa, Canada; S. H. Gilliland, V. A. Moore, John R. Mohler. S. H. Ward.

Resolutions.—M. H. Reynolds, Chairman, St. Anthony Park, Minn.; S. Stewart, T. E. Robinson, J. L. Robertson, W. H. Pethick.

Necrology.—F. Torrance, Chairman, Winnipeg, Manitoba; T. Bent Cotton, Wm. Dougherty, Geo. H. Berns, J. W. Scheibler.

Army Legislation.—T. Earle Budd, Chairman, Orange, N. J.; A. S. Cooley, J. R. Mitchell, J. C. McNeil, W. H. Kelly.

Association of Faculties and Examining Boards.—Chas. E. Cotton, Chairman, Minneapolis, Minn.; D. E. Salmon, J. G. Rutherford.

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this Association will take place at the Victoria Hotel, Chicago, Dec. 5 and 6, the week of the great International Live-Stock Exhibit, and veterinarians attending this show are specially invited to be present at the meeting. In this connection it should be borne in mind that the annual meeting of the Illinois Association always occurs simultaneously with the Live-Stock Exhibit. Secretary Welch assures us that a valuable programme will be prepared for this meeting.

DR. G. HOWARD DAVISON, of Millbank, N. Y., captured many ribbons at the Syracuse Horse Show with his wonderful ponies.

SOUVENIR POSTAL CARDS have arrived at this office from the VIII International Veterinary Congress, the REVIEW being remembered by Drs. Pearson, Moore, and Kelly.

ASSININITY VS. SANITY.—Spencer Borden, who once championed the trotting horse of America when Colonel George E. Waring assailed the breed, now terms the trotters mongrels. The Fall River horseman seems to have once more transferred his allegiance, the change this time being from Randolph Huntington's Clay-Arabs to English polo ponies. These, he maintains, ought to be admitted free of duty to the United States, and because the Treasury Department will not do so he demands the removal of Dr. D. E. Salmon, of the Department of Agriculture, who, he says, refuses to advise recognition of the stud book of the English polo pony breeders. In reply to Mr. Borden's rough shod criticisms, Dr. Salmon has politely drawn attention to the fact that the ponies registered in the English stud book are of all breeds and no breeds. Of fifty-seven stallions entered in the first volume thirteen were of unknown blood and the others were of mixed running—Arab, Irish, Welsh, Exmoor and Shetland blood. Of 311 mares recorded, more than one-half were of unknown breeding. As the law enacted by Congress expressly provides that only pure bred animals of recognized breeds can be admitted free of duty to the United States, Dr. Salmon says it would be a gross violation of the statute to let in polo ponies registered in a stud book which requires no other qualification in foundation stock than that the height of the animals shall not exceed 14.2 hands.—(*New York Herald, Sept. 3.*)

NEWS AND ITEMS.

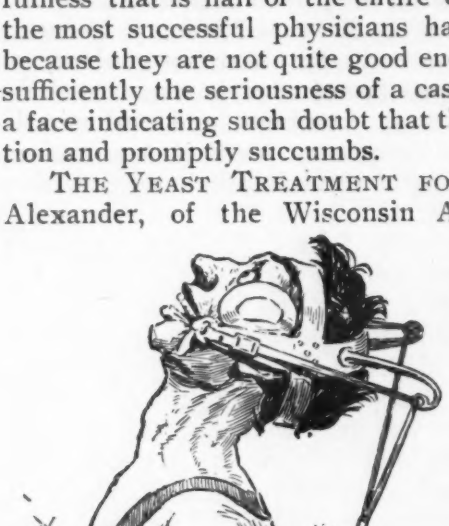
DR. BARR MARRIED.—The many friends of Dr. F. H. Barr, of Pana, Ill., will be pleased to learn that he has at last decided to forsake the ways of single blessedness and upon August 9th took unto himself a life partner in the person of Miss Susan Orr, of Decatur, Ill. Dr. Clarence C. Mills and wife, of Decatur, were witnesses of the happy event. Dr. Barr is a graduate of the Chicago Veterinary College, class of 1892, is Assistant State Veterinarian, and one of the most prominent and enthusiastic members of the Illinois State Veterinary Medical Association, whose members join in extending congratulations and best wishes for a happy voyage through life. (W. H. W.)

BROKE RIBS IN BATHTUB.—Dr. John C. Wallace, veterinary surgeon and assistant superintendent of the Street Cleaning Department, who lives at Fifty-first Street and Third Avenue, is a heavy man and has a bathtub with high sides. Emerging from the tub Thursday morning, his hand slipped from the wooden covering of the side and he dropped back into the tub with a splash and a thud. He didn't feel very well about it, but went about his business as usual all that day and the day following. Yesterday he felt much worse and called in Dr. B. E. Blaisdell, his physician. "I believe I've got appendicitis." he said, "and suppose I might as well be cut up now as later. Look me over." Dr. Blaisdell couldn't discover symptoms of appendicitis and took a look inside his patient with the aid of X-rays. They revealed two fractured ribs on the left side.—(*N. Y. Sun*, *Sept. 3*, '05.)

TACT IN THE PROFESSION.—According to the *Post-graduate*, for August, 1905, the dean of a medical college has recently prophesied that under the more rigid requirements of medical education and of State license, we are soon to have a shortage of physicians. The journal quoted does not shudder at the thought, for it is pretty generally believed that there have been too many physicians. At the same time there is something to be said in favor of having a large number of born doctors cast off from the leash every year. The law of the survival of the fittest is one of nature's most inexorable laws, and there are comparatively few physicians who find themselves so adapted to the environment of professional work that they are perennially full of enthusiasm. The greater the number of physicians graduated, the larger will be the number of those who will work

for a lifetime with enthusiasm in furthering the ideals of character and of work that are always before the physician who is fittest to survive. The rigid requirements of medical education and of State license will prepare a larger proportion of men for survival, but it is not always the man who is a "dig" at college, who carries into the sick room the bearing of cheer and of hopefulness that is half of the entire duty of the doctor. Some of the most successful physicians have remarkably good results because they are not quite good enough students to comprehend sufficiently the seriousness of a case to carry into the sick room a face indicating such doubt that the patient accepts the suggestion and promptly succumbs.

THE YEAST TREATMENT FOR BARRENNESS.—Dr. A. S. Alexander, of the Wisconsin Agricultural College, in the *Breeder's Gazette*, thus explains the theory underlying the good results obtained by yeast in its application to barrenness: "The theory upon which the use of this mixture is based is that the usual cause of barrenness is bacteria of some sort or another and that they give rise to an acid condition of the secretions of the generative organs which is destructive to the female ova and male spermatozoa. The yeast fungi (Saccharomyces) when introduced as suggested are supposed to invade every part of the cow's generative organs, destroy all bacterial life and incidentally neutralize the acid condition referred to. We understand that to Dr. Peters, of the Nebraska Experiment Station, belongs the credit of having discovered the first intimation of this method of treatment in a French medical book or journal. It is to be hoped that it will prove a success and readers are requested to give it a thorough trial and report results."



IF GOOD FOR A HORSE,
WHY NOT GOOD FOR A MAN?
—*New York Life.*

SURGICAL GYMNASTICS.—The following special dispatch from Chicago was published in the New York *Herald* of Sept.

10: "Experiments which may result in knowledge permitting grafting of the heart of one animal upon another have been made by Dr. Gutherie and Dr. Carrell, of the University of Chicago. Hearts of dogs have been successfully moved up into the animals' necks and there performed their functions. Circulation of the blood in dogs has been reversed without killing the animal, and many new things about heart action have been learned, according to Dr. Carrell, who will begin new experiments early in October. 'What we have learned,' said Dr. Carrell to-day, 'gives us hope that some day we may replace a wounded or worn out heart in a human being with the healthy, youthful and strong one from a living monkey.' In his laboratory Dr. Carrell has switched the circulation of his dogs from some arteries, leaving them dry for a time, thus opening possibilities for new methods of surgery in cases of violent injuries. One of the dogs selected for experimenting was lacking in the usual amount of hair. His circulation was switched to cure a goitre with success, and, according to Dr. Carrell, hair began to grow in places apparently bald. In another experiment the surgeon sawed off a dog's leg and then grafted it on again without doing the animal permanent injury. Dr. Carrell was formerly a surgeon in the French army and is at the University of Chicago only to conduct his experiments. This work is only in its infancy,' he said. 'I expect it will be carried on by others, until finally it will be of great and lasting benefit to mankind.'"

ROBERT KOCH.—In answer to a valued correspondent, we append the following facts regarding the eminent German bacteriologist:—Robert Koch is not a veterinarian. He was born in Hanover, Germany, in 1843, studied medicine at Göttingen, and it was while practicing at Wallstein that he began those bacteriological researches which have made his name famous throughout the world. In 1876 he obtained a pure culture of the anthrax bacillus, announcing a method of preventive inoculation against that disease seven years later. In 1882, largely as a result of the improved methods of bacteriological investigation he was able to elaborate, he discovered the bacillus of tuberculosis; and in the following year, having been sent on an official mission to Egypt and India to study Asiatic cholera, he identified the comma bacillus as the specific organism of that malady. In 1890 he promulgated tuberculin, and great hopes were entertained of its power to cure consumption, but it was absolutely without merit; but it has steadily increased in esteem as a diagnostic of that disease in animals, until to-day it is re-

garded as well nigh infallible. In 1901 the great bacteriologist cast the greatest shadow upon his reputation by maintaining before the London Tuberculosis Congress that tuberculosis of humans and animals were not the same disease and were not intertransmissible. This statement has been disproven by the best authorities of all lands. Dr. Koch also investigated the nature of rinderpest in South Africa in 1896, of bubonic plague in India in 1897, and of African Coast fever in 1902. He became a member of the Sanitary Commission of Berlin and a professor at the School of Medicine in 1880. (R. R. B.)

ANTITOXINES OF TUBERCULOSIS IN MILK.—Figari reports his clinical observations with milk of immunized animals in tuberculosis. Experiments upon rabbits showed conclusively that the milk of immunized animals when fed to rabbits was able to immunize them against experimental tuberculosis. Of a number of rabbits thus immunized, not one afterwards succumbed to the infection. Two of the rabbits killed after three months showed perfectly healthy organs at autopsy,and had increased to a noteworthy extent in weight. On the other hand, the control rabbits that had received the same dose of the same germs, under the same conditions, simultaneously with the other animals, died a short time after the injection, and showed all the signs of acute tuberculous infection. In two infants that had been fed with the milk of immunized animals, the author was able to show the antitoxines and the agglutinin contained in that milk were absorbed and reappeared in the blood serum of these patients. In the first case the blood after several months' feeding with the milk of immunized cows showed an agglutinating power of 1 in 40 and an antitoxic power of 450 units, and in the second case the agglutinating power at the end of the experiment was 1:60. While two cases are not sufficient for definite conclusions, the experiments recorded here were carefully conducted, and demonstrated that the human body, as well as that of lower animals, was capable of absorbing the agglutinins and antitoxines of tuberculosis contained in the milk of immunized animals. This method of treatment not only endows the blood with means for specific defense against tuberculosis, but also beneficially affects the general nutrition of the body, increasing the patient's weight and enriching the hæmoglobin of his blood. The great importance of the milk of immunized animals in the prevention and treatment of tuberculosis thus becomes apparent.—(*Reforma Medica, July 8; New York-Phil. Med. Jour., Sept. 2.*)

MILK INSPECTION.—The proper inspection of the milk supply, according to the *Charlotte Medical Journal*, for August, 1905, especially of the larger towns and cities, would no doubt save thousands of lives during the summer months. This does not mean the simple chemical and bacteriological examination, but also the inspection of the dairies whence the milk is derived. The practical and modern farmer can soon be taught how to care for his cows, how to milk a cow and allow the least possible contamination in the milk, and how to keep the milk until it is delivered. By following out these rules he can obtain a much better price for the milk, for this is the milk that is demanded by the bottle-fed infant, and if properly diluted and prepared according to the age of the child makes the best substitute for mother's milk. In some cities they have milk depots where the different constituents of the milk are put together in definite proportions according to the orders of the attending physician. Although theoretically this is ideal, practically it has not been as successful as obtaining the ordinary top milk from the dairies where strict cleanliness has been inforced. The details of observing strict cleanliness are carried out in the following manner: The stables are washed out twice a day, the cows are kept clean, the udder is washed before milking, the attendants are dressed in clean white suits, the hands are cleaned, and all means are used to keep the dust from the milk. The milk is put into a can, then packed in ice or surrounded by cold water, and kept till ready to be delivered. By this means a milk is obtained that contains no pathological bacteria and the fewest possible saprophytes. A sample from each dairy is examined bacteriologically and chemically; in this way any irregularities on the part of the farmer or his attendants can readily be traced. This work can be established only by the perseverance of the medical profession. This systom of milk inspection once installed so that this milk could be obtained everywhere, the question of infant feeding would be almost solved and then would result an important improvement of the large infant mortality.

THE MORGAN FAMILY OF HORSES.—Because the United States Government, through the Department of Agriculture, has been induced to lend a little aid to the commendable project of perpetuating the Morgan type of horse a small coterie of importers, breeders and others directly or indirectly interested in exploiting foreign stock have uttered a wail similar to that which greeted the recent announcement that the Secretary of

Agriculture was going to see what could be done to foster and preserve the trotting-bred carriage horse of America. Though a great many horsemen have criticised severely the means adopted by Dr. D. E. Salmon, chief of the Bureau of Animal Industry, in dealing with the problem, the end he has in view is commended by nearly everybody in the horse world who has no axe to grind. With the Morgans, as with the trotting-bred carriage horses, Dr. Salmon has decided, it is said, to buy a stallion and a few mares of approved blood and type for one of the government stations and there conduct the experiments in breeding. As pointed out by the *Herald*, and by numerous practical horsemen whose views were obtained and published last year, the plan adopted is so narrow in its limitations as to be of little importance, and, it is feared, of little real benefit to the horse breeding industry. By confining operations to the mating of a mere handful of horses, as Dr. Salmon purposes doing, the experiments will be reduced to the narrow scope of an individual breeder's experiences, instead of being on a broad basis befitting the undertakings of the United States Government, as they might be if the appropriation available were used in the purchase of stallions to be kept for free or nominal service to approved mares in the horse-breeding sections, the department, of course, reserving the right to buy any colt or filly at a fixed price at a certain age if wanted for government stud purposes. By this course many more stallions would be saved from destruction by the enterprising dealers who are all the time buying them up and using the knife to convert them into fashionable carriage horses for park and show ring work, while the number of foals produced under government supervision should be as fifty to one. It has been said that the "old-fashioned Morgans" as a family were the nearest approach to perfection for all-round road work in light and heavy harness ever produced in this country. More than half a century ago the *Herald* drew attention to this remarkable family, saying:—"These horses have long and justly been celebrated for their admirable qualities. They are particularly remarkable for their great strength in proportion to their size and for their powers of endurance. The Morgan horse, though a small animal, is noted for his bottom and hardiness, as well as for compactness and roundness of form. He is a very sprightly animal and is said to be more sagacious than the generality of horses." The striking characteristics of the Morgan horses of fifty years ago were their similarity of appearance and uniformity of character. They

were rarely more than fifteen hands high, and were even more thick set than the hackneys of to-day, without the meaty, gross appearance so often noticeable in that family. Their heads were fine, with small ears, their necks well formed, though rather short, their chests broad and deep, backs short, quarters wide and powerful and legs short, flat and sinewy, with big bone and tendons. But their most prominent peculiarity was their carriage—stylish and proud to an extreme, with quick, short, trappy action, the knees bending remarkably. Before the Hambletonians and other fast trotting families became popular the Morgans were sought after and cultivated in all sections of the United States, Vermont having been well nigh depopulated of stallions to supply the breeding studs of the West and South with stock horses. When the craze for speed in harness horses became general the Morgans were supplanted in popular favor to a very great extent by the families from which Dexter, Goldsmith Maid, Lady Thorn and Lucy came, and breeders who possessed the best Morgans hastened to cross them with racing stock, the result being the practical extinction of the old-fashioned Morgans in nearly all parts of the country. Since the introduction of European fashions in driving equipages the extraordinary merits of the old-time Morgans have again come in for appreciation in a new capacity,and many horsemen were long ago impressed with the idea that steps ought to be taken to revive and perpetuate this valuable family of horses. First-class specimens of the breed are as scarce as hen's teeth, yet a few remain, and these are highly prized for stock purposes. Through the efforts of Joseph Battell, a wealthy Vermont horse fancier, a stud book for Morgans was established about fifteen years ago, and breeding operations are now being conducted on systematic lines. The origin of the Morgans is shrouded in mystery. The founder of the family was a big little bay horse, 14 hands high, weighing about 950 pounds, foaled in 1789 or thereabouts and owned by Justin Morgan, of Randolph, Vt. He could outwalk, outtrot and outpull every horse in his section. Numerous attempts have been made to trace his breeding and he has been variously claimed as a Dutch horse from Esopus, N. Y.; a thoroughbred descended from Colonel James de Lancey's Wildair, a French-Canadian from the vicinity of Montreal and an Indian pony. Mr. Battell makes him out to be three parts thoroughbred, but this pedigree is not generally accepted, and it is refuted by the characteristics of the horse himself, as described by horsemen who had seen him. Whatever his inheritance he was a remark-

able sire, transmitting his own characteristics with great uniformity to succeeding generations. Close inbreeding established the type. Finley's Morgan Tiger is one of the few typical old-time Morgans, of which an accurate likeness has been preserved. This horse was foaled in 1846 at Bristol, N. Y., and was by May's Morgan Tiger, son of Morgan Rattler, by Sherman Morgan, a son of the original Justin Morgan horse. Morgan Tiger's dam was by General Hibbard, son of Woodbury Morgan, by the original Justin Morgan horse. Colby's Young Green Mountain Morgan represents the type quite well. He was by Turner's Sir William, who was by Green Mountain Morgan, out of a mare whose sire was Gifford Morgan and whose dam was by Gifford Morgan. As Green Mountain Morgan was a son of Gifford Morgan it will be seen how the early breeders sometimes doubled up the blood of a popular sire. Gifford Morgan was Woodbury Morgan, son of the original Morgan horse. Ben Franklin is one of the latter day Morgans, showing in his form the influence of his Abdallah blood. He was by Daniel Lambert, son of Ethan Allen, by Hill's Vermont Blackhawk, son of Sherman Morgan, by Justin Morgan's horse. Ben Franklin's dam was by Addison, son of Hill's Vermont Blackhawk. Denning Allen is another representative of the Ethan Allen branch of the Morgan breed. His sire was Honest Allen, son of Ethan Allen, and his dam was by Ward's Flying Cloud, son of Hill's Vermont Blackhawk. This horse was the sire of Lord Clinton, 2:08, one of the greatest trotters of his day. Shakespeare, a three-year-old colt, exhibited by Jay F. Carlisle at the recent Bayshore Horse Show, is regarded as a remarkably fine specimen of the Morgan family. He is a son of Gen. Gates, by Denning Allen, and his dam, Caroline, was by Daniel Lambert; grandam Cleopatra, by General Putnam, son of Rollo, by Hill's Vermont Blackhawk. At the World's Fair in St. Louis last year Shakespeare, then only two years old, won the grand championship for the best Morgan stallion of any age. In this connection it is worthy of note that his sire, Denning Allen, won the blue ribbon when twenty years old at the National Horse Show, and that Honest Allen, Ethan Allen, Blackhawk, General Putnam and, in fact, nearly all of his ancestors, were noted show horses in their day. Mr. Carlisle is about to establish a breeding stud, at the head of which he will place his handsome Morgan horse, mating him with mares of Morgan, Hambletonian and hackney blood, with a view to producing carriage horses of the fashionable type.—(*New York Herald, Sept. 3.*)

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table will be found the dates, places of meeting, and Secretaries' names and addresses of all the Veterinary Medical Associations of the United States and Canada. Secretaries are requested to see that their organizations are properly included in the list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	August, 1906.	.....	J. J. Repp, Phila., Pa.
Vet. Med. Ass'n of N. J.....	Jan. 11, 1906.	Trenton.	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	.....	.....	B. K. Dow, Willimantic.
New York S. V. M. Soc'y...	Sept., 1906.	Buffalo.	W. H. Kelly, Albany, N.Y.
Schuylkill Valley V. M. A....	.....	.....	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Vacation.	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n...	....	Dallas.	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet Med. Ass'n.....	.....	.....	C. L. Blakely, Augusta.
Central Canada V. Ass'n.....	.....	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n...	2d Tu-Wed Feb	Lansing	Judson Black, Richmond.
Alumni Ass'n N. Y.-A. V. C..	April, 1906.	141 W. 54th St	W. C. Miller, N Y. City.
Illinois State V M. Ass'n.....	Dec. 5 and 6.	Chicago.	W. H. Welch, Lexington, Ill
Wisconsin Soc. Vet. Grad.....	Call of Pres't.	Sheboygan.	S. Beattie, Madison.
Illinois V. M. and Surg. A....	Call of Com.	Champaign.	J. M. Reed, Mattoon.
Vet. Ass'n of Manitoba	.....	.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n...	.....	.....	T. B. Carroll, Wilmington.
Ontario Vet. Ass'n.....	.....	....	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	1st Wed. Oct.	141 W. 54th St	D. J. Mangan, N. Y. City.
Ohio State V. M. Ass'n.....	January, 1906.	Columbus.	W. H. Gribble, Wash'n C. H.
Western Penn. V. M. Ass'n...	1st Wed. ea. mo.	Pittsburgh.	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n...	.....	.. ..	J. H. Taylor, Henrietta, N.Y.
Iowa State V. M. Ass'n.....	January, 1906.	Ames.	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n..	.....	.....	J. G. Annand, Minneapolis.
Pennsylvania State V. M. A...	March, 1906.	.....	C. J. Marshall, Phila.
Keystone V. M. Ass'n.....	2d Tues. Sept.	Philadelphia.	C. J. Marshall, 2004 Pine St., Phila.
Colorado State V. M. Ass'n...	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n	.....	.....	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n....	3d Thursday June and Dec.	Providence.	T. E. Robinson, Westerly, R I
North Dakota V. M. Ass'n....	January, 1906.	Fargo.	E. J. Davidson, Grand Forks
California State V. M. Ass'n...	Mch. Je. Sep, De	San Francisco	P. H. Browning, San Jose.
Southern Auxiliary of California State V. M. Ass'n....	Jan. Apl. Jy, Oct.	Los Angeles.	H. D. Fenimore, Los Angeles
South Dakota V. M. A.....	....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	A. T. Peters, Lincoln.
Kansas State V. M. Ass'n.....	.....	Topeka.	Hugh S. Maxwell, Salina.
Ass'n Médécale Veternaire Francaise "Laval,".....	1st & 3d Thur. of each month.	Lect. R'm Laval Un'y Mon.	J. P. A. Houde, Montreal.
Alumni Association A. V. Col..	April each yr.	New York.	F. R. Hanson, N. Y. City.
Province of Quebec V. M. A...	.....	Mon. & Que.	Gustave Boyer, Rigand, P.Q.
Kentucky V. M. Ass'n.....	.....	... .	D. A. Piatt, Lexington.
Wolverine State V. M. Ass'n..	.....	.....	W. W. Thorburn.
Washington State Col. V. M. A.	Vacation.	Pullman, Wa.	Wm. D. Mason, Pullman.
Ohio Valley V. M. Ass'n.....	.....	Evansville, I'd	J. W. Moses, Mt. Vernon, Ind.
Iowa-Nebraska V. M. Ass'n..	.....	.....	A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n..	.....	.....	E. P. Flower, Baton Rouge.
Essex Co. (N. J.) V. M. Ass'n	.....	.....	B. K. Baldwin, Newark.

PUBLISHERS' DEPARTMENT.

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JUDGE RAY'S IMPORTANT DECISIONS. Two important decisions have been handed down by the Circuit Court of the United States, Southern District of New York, which affected the case of the REVERE RUBBER COMPANY in its suit for INFRINGEMENT on the AIR CUSHION RUBBER HORSE SHOE PAD against the Consolidated Hoof Pad Company of 16 Vesey St., New York City, also in their suit against the same Company on the use of the name "AIR CUSHION" and its abbreviation "A. C."

THE DECISION in part, is as follows: "The Complainant is now the owner of the Patent in suit. It is shown by the evidence that this Pad met with Great Success in the market and is practically very useful.

"IT AFFORDS VENTILATION, REDUCES CONCUSSION, PREVENTS SLIPPING and FORGING and IS DURABLE.

"THE COURT FINDS AND HOLDS THAT THERE WAS PATENTABLE INVENTION IN THE SO-CALLED 'KENT PAD,' THE PATENT IN SUIT. In this case it cannot be denied that the Defendant has infringed the Complainant's patent. It has closely copied it,—so closely that the Court is compelled to find INFRINGEMENT.

"The Complainant's Pad is declared VALID infringement by the Defendant is found. The Complainant is entitled to a decree for an injunction and an accounting.

"There is no QUESTION that the words 'AIR CUSHION' and the letters 'A. C.' designated the Pads made by the REVERE RUBBER COMPANY. * * * These pads had no other NAME. There is EVIDENCE showing that the pads of the Consolidated Hoof Pad Co. are INFERIOR to those of the REVERE RUBBER COMPANY and are sold for less price. These acts have been done and are being done by the Consolidated Hoof Pad Company, defendant in the original suit, KNOWINGLY and WILFULLY, and evidently for the purpose of putting on the market its own INFERIOR goods made in IMITATION of those of the complainant, REVERE RUBBER COMPANY.

"The effect is to DEFRAUD the REVERE RUBBER COMPANY, and deprive it of a portion at least of the trade to which it is entitled, and to DECEIVE and MISLEAD the public into purchasing, paying for, and using the pads of the Consolidated Hoof Pad Company, when the intention and desire was to purchase and use the pads made and sold by the REVERE RUBBER COMPANY. Such acts having such effects ought to be restrained, and within the authorities may be.

"Such LARCENY as this is neither ENCOURAGED, SANCTIONED nor LEGALIZED."

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